Gleanings in Bee Culture

CONTENTS

January, 1955

Established 1873 Vol. 83, No. 1

Monthly Honey Report 5
History of Beekeeping — George P. Georghiou ..... 9 - 11
It's an Idea — Milton Stricker 11
The Business of Beekeeping — Leonard Haseman 12
Honey in Infant Feeding — Dr. Alfred J. Vignec and Dr. Juan F. Julia .. 14 - 19
Beekeeping in Michigan — D. P. Barrett ..... 20 - 21
Using Ammonium Nitrate — Capt. Leo W. Bundy ..... 22 - 23
Honey Plants of North Jersey — Paul L. Holcombe ..... 24 - 25
Bees of India — C. N. Shivapuri ..... 26 - 27
Let's Talk about Honey Plants — Harvey Lovell ..... 28 - 29
A Sensible Approach to the Nosema Problem — C. F. Saxe 29
Well Begun — Mrs. Benj. Nielsen 30
How Many Can You Identify? 31
Editorials ..... 32 - 33
From Foreign Lands 34
Bee Facts 35
Some Recent Experiences in the Apiary — M. J. Deyell 36
Live and Learn — Propolis Pete **37**
A Talk to Beekeepers — M. J. Deyell ..... 38 - 40
American Honey Institute — Mrs. Harriett M. Grace 41
The American Beekeeping Federation Meeting in Chicago ..... 42 - 43
The Rip Van Winkles in Beekeeping — J. W. Newton 43
The Latest Theories on Wintering — Wayne Keller 44
Eastern Honey Outlook for 1955 — Roger A. Morse 45
My Bees Don't Read — David A. King ..... 45 - 46
Imbedding Bees by Electricity — Charles J. Koover 47
Tips for Beginners — Geo. F. Knowlton and Wm. P. Nye ..... 47 - 48
"Buzz About" Honey — Martha E. Booth 49
More Work for the Bee Inspector — Milton H. Stricker 49
Unity—a Low Cost Protection for Beekeepers — John H. Baynes ..... 50 - 51
More on the Struggle of the Bees — E. E. Lippik 51
Just News ..... 52 - 53
Asked and Answered ..... 54 - 55
Report on the Southern States Meeting 56

Subscription Rates: United States, Canada, Pan American countries, and Spain, one year, $2.00; two years for $3.50; three years for $5.00. Single copy, 20c. Other countries, 50 c per year additional for postage. Discontinuance: Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address: Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class matter at Post Office at Medina, Ohio. Published monthly. Opinions expressed by the writers in these column are not necessarily the opinions of the editors.

The A. I. Root Company, Publishers, Medina, Ohio

M. J. Deyell, Editor; H. H. Root and Walter Barth, Associate Editors
M. W. Hobart, Assistant Editor

A135282

The Perfect Combination

Root QUALITY

BEE SUPPLIES
and
SERVICE
from
SYRACUSE

Before placing your order, be sure you have our latest catalog and price lists. Your request on a postal card will bring them to you.

Root Bee Supplies to help you produce the most honey.

Honey Containers to market your honey attractively.

Modern equipment for rendering your beeswax at reasonable prices.

We pay the highest market prices for rendered beeswax — cash or trade. We will send shipping tags — just ask for them.

A. I. Root Co. of Syracuse
1112-14 Erie Blvd., East
Syracuse 3, N. Y.

We here wish you! —

A
HAPPY
NEW YEAR

Our
1955 catalogs
are ready.

Send for your
FREE
copy today.

Leahy Mfg. Co.
Box 5269
Higginsville, Mo.

BEESWAX
WANTED

We need 50,000 pounds of beeswax.

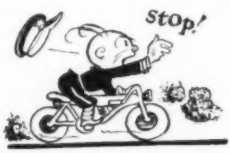
Ship what you have to us, and write us stating quantity.

Ship direct. No duty.

Prompt cash payment.

Canadian price higher and Canadian money worth more.

W. A. CHRYSLER & SON
Chatham - Ontario - Canada



STOP....

and think of the Tennessee Bee and Honey Co. when ordering your apiary needs. We are the ROOT bee supply headquarters for the central Mississippi valley. We will trade ROOT wired or Wyrless 3-ply foundation and bee supplies for your beeswax and will pay the highest prices for it. We also offer choice queens and package bees at fair prices shipped parcel post, express, or truck to any point.
Please write for information to the

Tennessee Bee & Honey Co.
Shelbyville, Tenn.

Canada's
National Monthly Magazine
for Beekeepers
Canadian Bee Journal
Streetsville, Ontario, Canada

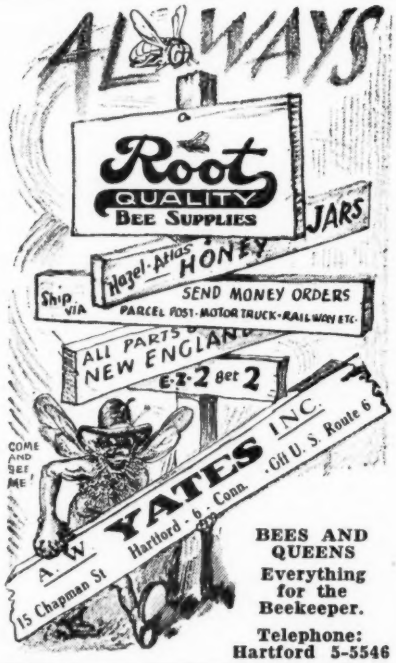
The Marshfield Mfg. Company

Marshfield — Wisconsin

Wishes to extend to everyone everywhere their very best wishes for the holiday season.

May the New Year bring Health and Happiness to you and yours.

Manufacturer's Apiary Supplies We Sell Direct



BEES AND QUEENS
Everything for the Beekeeper.
Telephone: Hartford 5-5546

We work your beeswax and purchase all grades of honey.

We pay you the best prices for quality honey and beeswax.

The Fred W. Muth Co.

229 Walnut St., Cincinnati 2, O.

Western Beeswax Headquarters

Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.
Top Cash Market
for Your Beeswax

MILLER'S HONEY CO.
Colton, Calif. Phone 1722

For
Root QUALITY
Goods in MICHIGAN
It's
Prairie View Honey Co.
Detroit, Michigan
Mail orders handled promptly
We carry a full line of "everything for the beekeeper"
HONEY bought for cash or traded for supplies
Plenty of parking space for cash-and-carry customers
PRAIRIE VIEW HONEY CO.
12303 Twelfth Street
Detroit 6, Michigan

XUM

As NEW as 1955

Taylor's AEROSOL....

HIVE-BOMB*

$1.29 at your regular Bee Supply Dealer

"the push-button bee-smoker"

FAST—ready to use
NO FIRE HAZARD—cool smoke
ECONOMICAL—highly concentrated

* trademark
Stewart Taylor
Camargo, Illinois

START THE NEW YEAR RIGHT

Check your bee supplies and get your order in early to

August Lotz Co.

Manufacturers & Jobbers
Bee Supplies
BOYD - - - - - WISCONSIN

Sue Bee Says:—

Start 1955 off by buying your bee supplies from the SIOUX HONEY ASSOCIATION. We have a complete stock and can give immediate delivery.

Our research department is constantly working on bee diseases, and would like to hear from you if you have a problem. We carry a complete line of Fumidil B, Terramycin, Streptomycin, Sulfathiazole, etc.

We are in the constant market for your beeswax and can handle your rendering problems.

We will see you at the National Beekeeping Federation meeting in Chicago, on January 26, 27, 28.

SIOUX HONEY ASSOCIATION
Rogers, Texas; Anaheim, Calif.; Lima, Ohio; Tacoma, Wash.; Sioux City, Iowa

The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping — Better Marketing. Subscription, 8 shillings per year, payable to
THE GENERAL SECRETARY
Box 19 Foxton, New Zealand

BRITISH BEE JOURNAL
The Only WEEKLY BEE Journal in the World
Subscription $4.50 per annum payable in advance.
Keep up to Date in Beekeeping by taking out a subscription now through our agents:
Gleanings in Bee Culture
Medina, Ohio

Monthly HONEY Report

United States Market

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Midwest	West
Bulk Honey:					
Table Grade	12-16-20c		12-14-16c	12-14-15c	11-14-15c
Baking Grade	10-11-14		10-12-14	11 12	10-12-14
Price to Grocers:					
5 lb. jar - can	18-23-26	19-25-27	18-20-21		19-21-25
2 lb. jar - 12's	25-28-32	26-27-28	20-24-25		21-24-27
1 lb. jar - 24's	25-28-30	25-27-28	23-25-30	25 26	21-25-27
Comb Honey: Cs. of 24 Sec.	$9-10-10.50		$8.40-8.65	$7.90	
Retail Price:					
60 lb. can	15-17-20	20 21	15-17-21	16 17	15-17-24
5 lb. jar	20-25-37	20-25-32	20-22-25	19-23-25	19-25-30
2 lb. jar	27-35-37	33-35-40	23-26-30	25-30-32	28-32-36
1 lb. jar	27-35-40	30-35-40	24-32-39	29-33-35	30-35-38
Honey Sales:	Good	Fair to Good	Good to Rapid	Rapid	Good
Estimated Crop: Conditions based on normal %	Fair to Good	Good	Good	Fair to Good	Fair

A few comments are as follows:
"Some honey in New York has gone to Canada at 20 cents per pound."—New York.
"Big shortage of honey and pollen in over wintering colonies."—New Hampshire.
"Weather is warm and dry. Bees wintering well."—S. E. Arizona.
"Good snow cover for honey plants."—S. E. Minnesota.

Canadian Market

(Unless otherwise specified, all quotations are for cases of No. 1 white.)

HALIFAX: Mkt. firm.
N.S. past. paper,
24/1 s ..... $ 6.30
N.B. past. paper,
24/1 s 6.75
N.B., Ont. past metal,
24/2's 12.50
Ont. past. paper,
48/1's 13.50
gran. metal,
24/2's 9.30
liquid glass,
24/1's 7.90

SAINT JOHN: Mkt. steady.
Ont. Past., glass,
24/16-oz. ..... $ 7.80
paper,
24/1's 6.90
24/2's 12.60
metal,
12/4's 13.35

MONTREAL: Market steady.
Que. White, metal,
24/2's $11.50-12.00
12/4's 11.00-11.50
glass
24/8-oz. 4.50- 4.75
24/16-oz. 6.75- 7.00
Dark, metal,
24/2's 7.00- 7.50

OTTAWA: Mkt. stronger.
Ont. past., paper,
24/1's ..... $ 6.55- 6.60
metal,
24/2's 12.53-13.00
metal,
12/4's 11.99-12.45
Golden, metal
12/4's 9.60- 9.75
Amber, metal
12/4's 9.75

TORONTO: Mkt. firm.
Ont., past., paper,
24/2's $11.10-11.50
24/1's 6.00- 6.25
glass,
24/16-oz. .. 6.75- 7.00
Amber, paper,
24/2's 8.50- 9.00
Man., past., metal,
12/4's 11.50-12.50

WINNIPEG: Mkt. steady.
Man. metal,
24/2's 9 95
12/4's 9.35
past. paper,
48/1's 11.55
24/2's 11.25

REGINA: Mkt. steady to firm
Sask. metal,
12/4's $10.35-10.50
past. paper,
48/1's 12.80-13.10
metal,
24/2's 12.25-12.85
12/4's 11.70-11.80
6/8's 11.55-11.60

SASKATOON: Mkt. steady.
Sask., metal,
24/2's $10.45-10.65
12/4's 10.00-10.25
past. paper,
48/1's 12.60-12.90
metal,
24/2's 12.30-12.50
12/4's 11.75-11.80

EDMONTON: Mkt. steady.
Man., past. metal,
12/4's $10.80-10.95
Sask., metal,
24/2's 9.80
Alta. past., paper,
48/1's 12.00-12.85
B.C. liquid glass,
12/1's 4.60

CALGARY: Mkt. firm.
Alta., metal,
12/4's $10.50-11.25
6/8's 11.00
past., paper,
48/1's 12.25
24/2's 11.75-12.40
metal,
12/4's 12.40-12.50

VANCOUVER: Mkt. steady.
Alta., past., metal,
24/2's $12.95
12/4's 12.60
Carton,
48/1's 13.00
24/2's 12.60
B.C., unpast., carton,
24/2's 6.95

XUM

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

Our bee supply catalog contains 64 pages and being so very much larger it contains many items not found in other catalogs. We manufacture bee hives, frames, bee comb foundation (wired, plain brood, and thin super), honey extractors, processing tanks, storage tanks, etc.

We also manufacture a mechanical lifting arm that fits on 1½ ton and larger trucks that will lift the supers off and set them back on the hives or you can load them on the truck with push button ease.

Why don't you write now for your free copy of this catalog and learn how you can save 25% by buying direct from us and also secure equipment that will speed up your work and make it easier.

THE WALTER T. KELLEY CO. **CLARKSON, KENTUCKY**

COLORADO HONEY

Available

in Carloads or Less

Samples, Grades and Prices Gladly Submitted

Wire or Write

COLORADO HONEY ADMINISTRATIVE COMMITTEE

1635 Blake Street, Denver, Colorado

— HONEY WANTED —
ALL GRADES. SEND SAMPLES
ADVISE QUANTITY
HONEY SALES COMPANY
1806-08 No. Washington Ave.,
Minneapolis 11, Minnesota

We will work your **beeswax** into foundation or buy it for cash. We will render your old combs or cappings. Write for shipping tags and prices.

Schmidt Apiaries
Rt. 4, Bay City, Mich.

WE RENDER BEESWAX
We will buy the wax
or make up
ROBINSON Brand
plain foundation
or
WAVY-WIRED
wired foundation

WAX WORKERS
1330 Slaterville Road
Ithaca, N. Y.

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month.
Subscription 10/-per annum plus 2/6 postage to oversea countries.
Address 112 Whitehorse Rd.
Ringwood, Victoria, Australia

the Hubbard APIARIES

WANTED: Honey and Beeswax

Write for Free Catalog

Quality Bee Supplies **Factory Prices**
Prompt shipment from Stock **Satisfaction Guaranteed**
Manufacturers of Bee Supplies and Comb Foundation

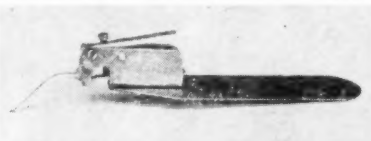
THE HUBBARD APIARIES

Onsted, Michigan

H. H. JEPSON CO. — 46 Lincoln St., Boston, Mass.

Supplying N. E. Beekeepers with A. I. Root products for 50 years.

Boston Stock — Root Prices



QUEEN RAISERS

Transfer your larva with the MASTER QUEEN GRAFTING TOOL. Quick. Easy. Accurate.

Price (with extra tongue) $3.60

HUTCHISON MFG. CO., 2008 S. Sepulveda Blvd., Los Angeles 25, Calif.

"Wise - Woodmanize your Bee Supplies"

A. G. Woodman Co. (Send for Catalog-350 Listings) **Grand Rapids 4, Mich.**

STOLLER'S

Frame Spacers

The finest thing ever offered beekeepers. See your dealer, or write.

STOLLER HONEY FARMS

Latty, Ohio

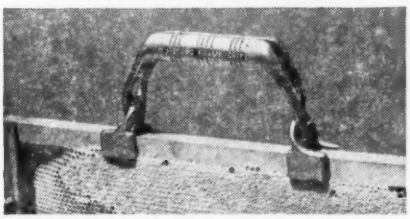
HONEY WANTED

Cut Comb and Extracted
Advise what you have

T. W. BURLESON & SON

WAXAHACHIE, TEXAS

McCord Frame Grip



"Originators of Frame-Grips"
Send now to McCORD MFG. CO.
Rt. 2, Box 866, San Jose, Calif.

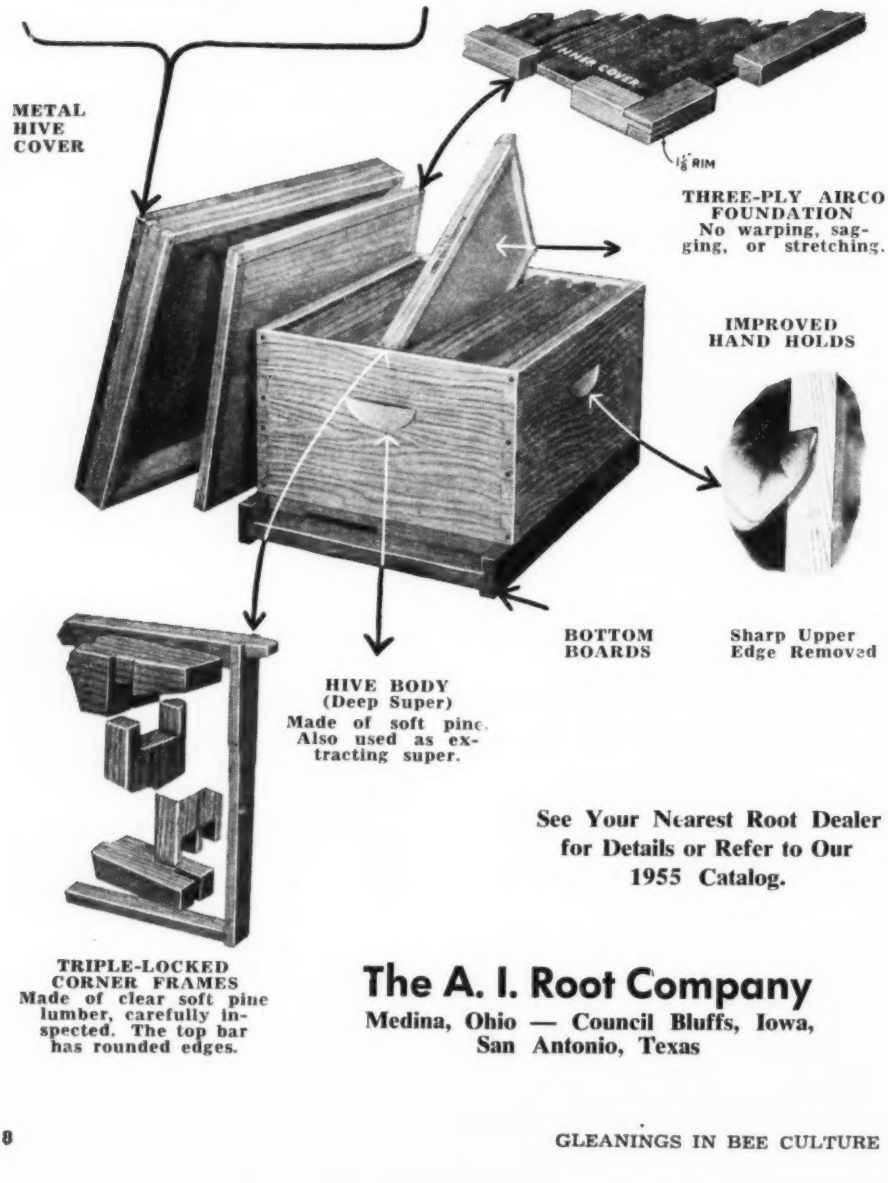
Positive grip through the leverage action of this strong aluminum Frame-Grip.

DELUXE $2.75
UTILITY 2.45
Plus 32c postage fee.

Also obtainable from your leading Bee Dealer.
Don't accept a substitute.

We Are Entering Our 86th Year of Manufacturing Economical and High Quality

STANDARD Bee Equipment


STRONG INNER COVER
Extra heavy rim. Board made of three pieces.
METAL HIVE COVER
INNER COVER
1⅛" RIM
THREE-PLY AIRCO FOUNDATION
No warping, sagging, or stretching.
IMPROVED HAND HOLDS
BOTTOM BOARDS
Sharp Upper Edge Removed
HIVE BODY
(Deep Super)
Made of soft pine. Also used as extracting super.
TRIPLE-LOCKED CORNER FRAMES
Made of clear soft pine lumber, carefully inspected. The top bar has rounded edges.

See Your Nearest Root Dealer for Details or Refer to Our 1955 Catalog.

The A. I. Root Company

Medina, Ohio — Council Bluffs, Iowa, San Antonio, Texas

GEORGE P. GEORGHIOU, Nicosia, Cyprus

Part I

[George P. Georghiou, entomologist of the Department of Agriculture in the Island of Cyprus, is the author of this series of articles on the History of Beekeeping. He compiled this information recently when he was a student of Entomology at Cornell University.—Editor.]

15000 B.C. is the oldest record that we have on beekeeping. It is a painting of the Magdalenian period (Paleolithic Era) found on a rock of the "Cuevas de La Arana" in Valencia, Spain. The painting shows two men climbing up long ropes, probably woven of sedge-grass, to a small natural hole in a cliff, evidently intended to represent the dwelling of a swarm of bees. One of the men is shown taking the honeycomb out of the hole and placing it in a basket. Bees are shown flying around.

3000 B.C.—Written records indicate that migratory beekeeping up and down the Nile River in Ancient Egypt was a common practice. Since the season in upper Egypt was earlier than in lower Egypt, beekeepers took their bees up the Nile after the honey was harvested. The hives were placed on rafts from which the bees flew to gather honey. Then the rafts were moved farther down the Nile to a point where there were more flowers.

From the First Dynasty of Pharaohs (3200-2780 B.C.) until the Roman period, the titles of the kings of Egypt were always associated with the sign of the bee. The cartouche containing the name of the king is preceded by a bee. Tombs of the First Dynasty bear the sign of the bee. It is evident that the Egyptians held the bee in honor.

2050-1950 B.C. to ....—In Assyria, during and following the period of Sargon I, the bodies of the dead were smeared with wax and buried in honey.

1580-1350 B.C.—A wall painting of the 18th Dynasty in Thebes, Egypt, shows a man carrying honeycombs and grapes, and bees hovering over the combs. The striping and coloring of these bees is identical to the Egyptian bee of today.

986-933 B.C.—King Solomon speaks of honey and the honeycombs in many passages. "My son, eat thou honey, because it is good; and the honeycomb which is sweet to thy taste". (Proverbs 24:13).

750 B.C.—The Greeks were well versed in beekeeping as early as this period, with bars in their hives and regulations in regard to overstocking.

640-599 B.C.—Solon (Athenian Lawgiver). One of his laws provides that no new apiaries should be established within a distance of 300 yards from previously established apiaries.

460-370 B.C.—Democritus (Greek philosopher), as well as other Greek writers before Aristotle, make mention of the generation of bees from oxen. Democritus gives instructions on how to obtain bees in such a way. This belief has persisted for several hundred years, and appeared for the last time in 1842 A.D., when it was stated that a certain Carey had successfully performed the miracle in Cornwall, England.

Democritus' instructions are here presented in some detail:

"Kill an ox and confine it in a one-room building, closing with clay every opening. Then open the building on the 32nd day and you will find it full of bees, crowded in clusters on each other, and the horns and the bones and

B & Z LIBRARY

the hair and nothing else of the bullock left.

"They say indeed that the 'kings' are produced from the brain, but the other bees from flesh. Kings are also produced from spinal marrow. But those that are produced from the brain are superior to the others in size and beauty and in strength.

"But the first change and transformation of the flesh into living creatures, and as it were a conception of birth, you will thus know: for when the building is opened, you will see things small and white in appearance and like one another and not perfect, not yet such as may be called living animals, in greater number about the bullock, all indeed motionless. But gradually you may then see the form of the wings with their divisions, and the bees assuming their proper color and seated around their king, and flying, but to a small distance and with tremulous wings on account of their members."

400 B.C.—Xenophon (Greek Historian), describes the activities of the queen comparing her work with that of a housewife:

"While she stays in the hive, she does not allow the bees to get lazy, but sends out those who have to work outside, observes what they bring in, takes it and stores it until it can be used. When the time comes she divides it fairly well to each one. Further she supervises the building of the combs in the hive and she sees to it that they are constructed well and pretty and that the brood is reared in an orderly way." Thus Xenophon considers the queen as the guiding brain of the hive.

Xenophon in the 4th book of Anabasis, gives the earliest account on record of honey causing sickness to man. The ancients believed that this honey was gathered from a species of rhododendron, probably **R. pontica.** (See 1784 A.D. in a later issue.)

400 B.C.—Aristophanes (Greek) said that beeswax is good for many purposes, among which are metal protection, modeling, writing tablets, and for sealing love letters.

384-322 B.C.—Aristotle (Greek) was the first to deal with the bees in a scientific way. He did not accept anything without putting it to test. His writings contain an immense quantity of accurate observations on bees. However, he had limitations due to the fact that the hives he used had no movable frames (only top bars) and therefore he was compelled to remove from the hive permanently each comb that he examined. Because of this handicap he was unable to examine certain phases of the life of the bees.

He begins the life history of the bee by remarking that after the cells have been constructed, the larvae are placed in them. This is the earliest stage of which he speaks, from his own observation. He describes with great accuracy the growth of the larvae into an adult bee.

In the "Generatione Animalium", however, he concludes that the rulers generate rulers, and the workers generate drones and the drones do not reproduce. Therefore, Aristotle was the first to drop the idea of the generation of bees from oxen. In regard to the "rulers" he stated that there is always more than one in the hive, and that the hive goes to ruins if the rulers are too many or too few. However, he states correctly, that the rulers are connected with the production of brood.

Aristotle also mentions that some beekeepers use what we might call "primitive drone traps" made of a net which keeps the drones out, but allows the little bees to pass through. He states that the honey is carried in the honey stomach of the bees, and that pollen (beebread) is carried on the legs of the workers. He does not understand the origin of wax and states that it is carried in the hive on the legs of the workers. He mentions "foulbrood" and several other enemies of bees, including toads, swallows, frogs, wasps, etc.

Aristotle was the first to notice that honeybees do not visit flowers of different kinds on one flight, but remain constant to one specie. His works remained the basic source of information until after the Middle Ages.

372-287 B.C.—Theophrastus (Greek) wrote mostly on plants, but he refers to beekeeping in several places in his works. Although he knew that nectar is connected in some way with flowers, he still mentions the old belief that nectar is spontaneously generated from the air and from reeds.

116-27 B.C.—Varro (Roman scholar and author). He mentions a certain Seius, who leased his hives at a yearly rent of 5000 pounds of honey, and another successful beekeeper named Velanius whom he knew in Spain. He inherited half an acre of land, on which he made a garden and used the rest planted with thyme, cytins, and apiastrum, as an apiary. He was successful and cleared on the average 10,000 sesterces a year ($320).

Varro gives a long list of the materials of which hives are made, including those made of osiers and round in shape (perhaps skeps), those made of wood and bark, those made of hollow trees, of earthen-ware, and last of all those made of reeds. The last named are to be 3′ x 1′ x 1′, narrower in the middle than at the ends, and capable of contraction and enlargement, by pushing in and drawing out the ends.

He mentions that spring diarrhea is said to be due to feeding on almond and cornel flowers, and for a cure, urine is given them to drink. Wax is still thought to be collected from flowers. It is believed that Virgil (70-19 B.C.) copied largely from Varro.

From Varro's writing it is evident that beekeeping was an established commercial practice in several countries bordering the Mediterranean sea.

100 B.C.—In Roman Law, bees which were not enclosed in a hive, were legally considered masterless. "Bees are wild by nature. Therefore, bees that swarm upon your tree, until you have hived them are no more considered to be your property than the birds which build their nests on your tree; so if anyone else hives them, he becomes their owner".

70-19 B.C.—Virgil (Roman poet). His poems are characterized by a deep love and admiration toward bees. He refers to bees on about 16 occasions, in Eclogues, Georgics, and Aeneid. He is both a beekeeper and a poet. He gives a lot of realistic information and instructions about bees, but he lacks the scientific method of Aristotle. He considers thyme to be the best honey.

Virgil recommends clipping of the wings of the ruler to check the issue of swarms. He speaks about shade and wind protection. He also states that the noise of cymbals is to be used to make the swarms settle. This belief has persisted in many countries until today. He states that bees gather their young from leaves and sweet plants, a statement which Pliny later copied. (See Pliny, 62-113 A.D.)

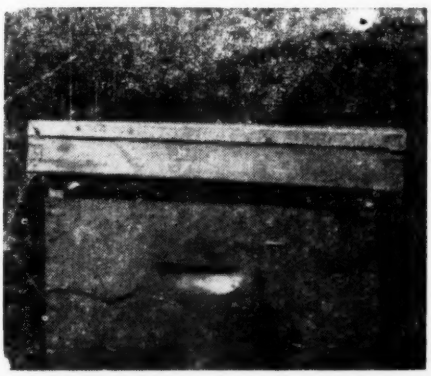
(to be continued)

It's an Idea

To Expell Excess Colony Moisture

MILTON STRICKER, Annandale, N. J.

EXCESS MOISTURE has killed more colonies in New Jersey than cold weather. New Jersey beekeepers place a strip of shingle underneath the escape board or under the metal cover to allow an auxiliary flight hole and moisture expeller in all colonies about the first of November.



During the winter colony entrances should be examined to make sure they are not clogged.—Photo by Harry Tall.

The business of beekeeping

DR. LEONARD HASEMAN, University of Missouri, Columbia, Missouri

FOR THE prospective beekeeper the all-important thing is to get started right. As with any other line, there is a right and a wrong way to begin. If this discussion on beekeeping does nothing more than help a few prospective beginners to become proficient honey producers, the writer will feel well repaid for his efforts.

Nothing in beekeeping is so discouraging as to find an occasional person who failed to heed the warning "grow, not go, into beekeeping" with the result that he has many dollars' worth of equipment piled up for kindling. The average beginner will find that two or three colonies are enough for the first season and some of our most successful beekeepers began with a single swarm.

Essential Equipment

Even the amateur who plans to keep a few colonies of bees largely for recreation and pleasure should make it a rule that the bees must pay their way. Certainly the beginner who plans to keep bees for profit cannot afford to invest in any unnecessary equipment. The one all-important piece of equipment is a good modern, movable-frame hive.

Most beekeepers have found the standard, 10-frame Langstroth, or so-called dovetailed hive, most satisfactory. Some prefer a larger type hive. However, make your decision as to the hive you are going to use and then use only that size hive, so that all hive parts may be interchangeable.

The beginner is advised by all means to start with extracting rather than section supers. The production of section honey is the work of an experienced beekeeper and the beginner should leave it alone until he has had some experience. The average beginner, however, insists on starting out to produce those beautiful pound sections and he is usually disappointed.

Start with extracting supers and for the first few years cut the combs from the super frames and market it as cut-comb honey. When the production justifies, an extractor may be secured. If the standard shallow extracting supers are secured, later they can be used for the production of section honey by simply securing the sections and the section holders which fit them. Equipment may be secured in units of five in the flat and nailed and painted at home, if one is handy with tools and

is careful to put the equipment together properly.

Besides the hives, a good bellows smoker should be secured, for the one thing which will give the beginner most courage is a well-filled smoker in prime condition. However, he must remember that smoke is a whip and he should use it sparingly. A bee veil should also be obtained.

Besides these few pieces of equipment, a hive tool and scraper are useful, though a wide wood chisel or the thin end of a leaf of a buggy or car spring will serve the purpose very well. The use of comb foundation, properly supported by wiring, for securing straight combs is essential. Syrup pails or glass fruit jars may be used as containers for storing honey but attractive bottles should be used when marketing the surplus.

Here is a swarm that will develop into a good colony. —Photo sent by Edward Muldoon.

Selecting the Apiary Site

ON EVERY farm and in each town or city backyard may be found a satisfactory place to keep a few or several colonies of bees. If possible, give each colony an east or south exposure and some natural shade though shade boards may be used where natural shade is not available. Favorable air and soil drainage are essential.

Locate the hives on well drained or sloping ground. Place them six feet or more apart, when possible, to prevent drifting.

A natural windbreak is fine, where it is available. In town a high board fence may not only provide a windbreak but it also helps to keep the flight of bees above traffic. On a fruit farm the ideal place for the bees during blooming period at least is among the fruit trees.

A brick under each corner makes a very satisfactory support for the hives. It keeps them off the ground and at the same time does not raise them so high as to seriously inconvenience the loaded bees which miss the alighting board. Be sure that the hives are level sidewise and tilted to the front slightly, so that the rain and moisture in the hive will drain off the front of the bottom board. Under Missouri conditions, it is more satisfactory to winter bees on their summer stands with such windbreaks and packing as the beekeeper finds necessary. In arranging the hives, therefore, select a permanent location for them.

How to Secure a Start in Bees

Most beekeepers of the present day made their start by catching a stray swarm. Few deliberately planned to keep bees. The opportunity was thrust upon them and the inspiration to keep bees came with the hiving of the first swarm. However, for the benefit of those who plan to keep bees and for the beginner who wants to get more bees, suggestions as to the best methods of getting bees will be helpful.

The beginner will usually find that his best means of getting a start of bees is to buy one or more swarms from a neighbor who understands the handling of bees. They will cost him less and

(Continued on page 61)

XUM

Honey in infant feeding*

ALFRED J. VIGNEC, M.D., Medical Director, N. Y. Foundling Hospital

and

JUAN F. JULIA, M.D., Dept. of Pediatrics, N. Y. Foundling Hospital

INTRODUCTION

HONEY WAS extensively used in ancient times as a supplement in infant feeding, particularly with newborn babies.[1] In more modern times it has in large part been displaced as a source of carbohydrate by other sugars except in some countries of the Middle East and Asia, particularly Japan. In these countries, for practical reasons, honey has always enjoyed considerable popularity, and the science of apiculture is highly developed. This is readly understandable, since honey is found free in nature, is easily produced, and requires no treatment or preparation before use.

In this country, honey has been used chiefly in rural areas and, even in these areas, only in a sporadic fashion. There were many reasons for this, but among the most important were the lack of uniformity in the product and our inability to produce honey in adequate quantities. In recent years, however, the beekeeping industry has been greatly expanded and, with improved methods of apiculture, is now producing a uniform product, free from contamination, at relatively low cost.

A major factor in this revived interest in apiculture has been the investigations of the Department of Agriculture, which have demonstrated that the wild bee was gradually becoming extinct because of deforestation. Since one of the most important functions of the bee is pollinization, our agricultural economy was seriously affected by this deve'opment, and the only solution to the problem was the improvement and development of the domesticated bee. This has been accomplished, and, as a concomitant to this, superior and more uniform types of honey are available.

Honey has the following composition: water, 17.20%; sucrose, 0.40%; levulose, 39.10%; glucose, 34.00%; and dextrin, 0.45%.[2] The glucose fraction is quickly and readily absorbed and excreted, while the absorption and excretion of levulose occurs at a much slower rate. The presence of levulose therefore tends to minimize wide fluctuations in blood sugar.[3] Honey also contains appreciable amounts of iron, copper, and manganese.[4] The work of Takagi, in the Department of Pediatrics at the University of Tokyo, indicates that in the experimental animal the minerals are readily available for hematopoietic stimulation.** The evidence as to the presence of vitamins in honey is conflicting, and in all probabilities they are not present in significant amounts.†

The effect of honey on the nutrition of infants has been recorded by a number of observers, but either on a limited scale or with inadequate detail.†† Since pediatricians are constantly in search of methods of feeding which will reduce the incidence of feeding problems, viz., regurgitation, poor weight gain, nonspecific enteritis, etc., in small infants, it was felt that comprehensive and comparative observations on the use of honey and other sugars in infant formulas would be of interest.

THE CLINICAL material utilized in this study was comprised of infants

* Reprinted from the October 1954 issue of the American Journal of Diseases of Children. This work was aided by a grant from the Lake Shore Honey Products, of Chicago.

** Takagi, Y.: Personal communication to the authors.

† References 2 and 6.

†† References 2, 3, and 7-9.

admitted to the New York Foundling Hospital. This is a multifunctioning institution with a capacity of approximately 240 infants and children under two years of age, the majority of whom are under one year of age. Admission is contingent primarily on social need rather than organic disease, since the institution is devoted to the care of abandoned, neglected, or dependent infants.

It follows, therefore, that while most of the infants are admitted as well, they not infrequently present nutritional and emotional problems of greater or lesser severity. Moreover, it should be pointed out that, since these are institutional infants, their weight and growth curves cannot be compared with those of noninstitutionalized children. Comparative interpretations of nutritional data, particularly, are therefore valid only between groups within the institution.

During their stay, the infants are given complete pediatric work-ups, which include c o m p l e t e blood cell counts and urinalyses and any other laboratory procedures which seem indicated. They remain in the institution until arrangements can be completed for social disposition. The period in residence varies considerably and may range from a few days to several months, the average being three to four months.

Since most of the infants admitted present social problems, it frequently happens that no data on the past feeding history is immediately available. Accordingly, we begin feedings on a somewhat dilute basis, as one does routinely in hospital nurseries The initial feeding is a 1:2 evaporated milk-water mixture, with no carbohydrate in the very young infants or with at most 2½% carbohydrate. After a few days or even one week of observations, the milk-water mixture is concentrated and the carbohydrate increased to 5% of the total formula, with a caloric value of 110 calories per kilogram. During the course of this study, all formulas were initially prepared with 2.5% carbohydrate and gradually altered until the carbohydrate comprised 5% of the total formula by volume.

The infants receive a concentrated multivitamin supplement, and solids are added progressively according to age. At the second month, cereals and fruit are added to the diet, in the third month, vegetables, and in the fourth month, egg yolk and infant meats.

For the purpose of this study, the infants were divided into three groups. Group A received the usual evaporated milk-water mixtures, with the addition of honey* as a carbohydrate. Group B received the same formulas, but with a refined sugar (Dextri-Maltose No. 1) as the added carbohydrate. The formulas of the infants in the third group, Group C, were supplemented with Karo. Initially we had intended to use only Karo as a control, but subsequently we decided to compare the honey-fed infants with those fed a more highly refined sugar, such as Dextri-Maltose No. 1. All formulas were isocaloric. The diets of the infants were therefore identical in every respect except for the carbohydrates.

Careful observations were made and recorded on work forms separate and distinct from the hospital records. The latter, of course, could be referred to when needed, although this was seldom necessary. Weight curves were kept weekly on younger infants (under one month) and m o n t h l y weight and growth curves on older infants. Increases in formula and additions to the diet were carefully recorded, as well as the number and type of stools, illnesses, treatments, etc. In addition to the admission blood cell counts, monthly red blood cell counts and hemoglobin determinations were performed and repeated more f r e q u e n t l y when necessary.

Infants remained under observation until the fourth month of age or until their discharge, whichever came first. Seventy-seven per cent of the infants were observed for one month or more. Observations made on newborn babies, even if their stay was short, were incorporated in the study, since we considered it pertinent to compare acceptability and the gastrointestinal reactions to the three carbohydrates in this young age group.

It should be noted that most observations recorded were not b a s e d on chronological age but on the length of time in the study.

* The honey used throughout this study is a processed and pasteurized light clover honey, and was supplied by the Lake Shore Honey Products, of Chicago. Dark unprocessed honey apparently has a harsher action than the light processed honey.

Observations after the fourth month of age were discontinued because it was felt that the total intake of supplementary foods varied considerably between infants, and at this time the amount of carbohydrates in formulas is either reduced or discontinued. Supplementary foods, cereals, etc., are begun after the first month but as a rule do not significantly alter nutrition until the third or fourth month of life. Consequently the comparative data in regard to formulae is of more significance in any study of this type in the first two months. For practical reasons (personnel, amount of time available for feedings, etc.) we are inclined to maintain infants on formulas for longer periods than one does when managing infants in private practice.

Results

A TOTAL of 387 infants were observed in the course of the study, 183 boys and 204 girls. The following tabulation subdivides these totals in terms of groups and sex:

	Group A	Group B	Group C
Boys	60	53	70
Girls	76	62	66
Totals	136	115	136

There were 10.2% nonwhites in Group A, 16% in Group B, and 15% in Group C. Since only a small percentage of the total cases were nonwhites and since they were about equally divided between the three groups, it was felt that a separate analysis of the findings in these infants was not necessary.

Table 1 illustrates the age distribution of the infants when entering the study and Table 2 the length of time the infants remained under observation. Table 3 represents the average weekly weight increments by months and the average length increments by months during the period of observation. The former demonstrate very clearly the statement previously made that these infants do not gain weight as well as infants who receive individualized attention in their own homes.

Table 1.—Distribution by Ages and Groups at Start

Ages	Group A	Group B	Group C
0-1 wk.	34	29	38
1-2 wk.	41	19	23
2-3 wk.	11	12	7
3 wk.-1 mo.	7	7	18
1-2 mo.	17	33	23
2-3 mo.	13	12	11
3-4 mo.	9	1	5
4+	3	1	6
Unknown*	1	1	5
Totals	136	115	136

* Abandoned infants whose exact age was not known; most of these infants, after developmental testing, were given an estimated age of under one month.

The monthly average of red blood cell counts and hemoglobin (Sahli method) are listed in Table 4.

The diagnosis of nonspecific enteritis includes those cases which present no physical findings of infection, but whose stools become semiloose to watery and who also fail to gain adequately. We consider that the consistency of the stools correlated with the weight gives a more objective interpretation than, for example, the type of stool or the frequency of stools alone.

It is not unusual for an infant in the first week or two of life to pass occasional semiloose, loose, or even watery stools. By the same token, some infants will have seven or eight stools daily, but of a good consistency. The average number of stools in the first two weeks of life vary from four to six, and after that period from two to four, but there are wide individual differences.

Therapy for these cases consisted of either a short starvation period followed by a temporary dilution of formula, discontinuing the carbohydrate, administering a hygroscopic agent, or medication in the form of sulfadiazine or antibiotics. The latter is used empirically, the rationale being that either the intestinal flora is altered or that an inapparent infection is present. Cases of nonspecific enteritis, while generally not of serious import, can be very disturbing and when they occur must be treated.

In this connection it is interesting to note that, over a period of time, we

Table 2.—Length of Time on Study

	1 Week	2 Weeks	3 Weeks	4 Weeks	8 Weeks	12 Weeks	16 Weeks
Group A	9	7	4	41	32	21	22
Group B	8	8	5	19	26	13	36
Group C	22	17	10	24	33	18	12
Totals	39	32	19	84	91	52	70

Table 3.—Average Weekly Weight Gains and Average Height Increments

Observation Period	Average Weekly Weight Gains, Gm.			Average Height Increments, Gm.		
	A	B	C	A	B	C
1 Mo.	176	167	133	5.2	5.2	4.5
2 Mo.	161	181	159	2.5	2.4	2.6
3 Mo.	161	181	161	2.8	2.1	1.1
4 Mo.	161	161	156	1.6	1.6	1.3

Table 4.—Red Blood Cell Count and Hemoglobin Averages

Observation Period	Red Blood Cell Counts			Hemoglobin		
	A	B	C	A	B	C
Start	4,520	4,270	4,350	14.7	13.5	14.3
1 Mo.	3,822	4,088	3,852	11.0	11.9	10.7
2 Mo.	3,704	3,927	3,626	10.0	12.0	9.8
3 Mo.	4,284	3,927	3,899	10.6	11.3	9.8

have alternated various recommended types of oral treatment for this condition, and we have found that omitting one or two feedings and diluting the formulas for 24 hours is by far the most satisfactory method of handling the problem. In our experience, 7% of these cases eventually require parental support, and there was no appreciable variation from this figure in the current study.

In Table 5 we have listed the incidence of feeding problems under the general term "Nutritional Morbidity." Poor weight gain was in most cases due to inacceptability of the formula offered, but occasionally to prolonged irritability. Irritability of short duration is not an unusual feature in our infants during their first few days in the institution and is frequently due to emotional disturbance. It has many of the features of colic with one outstanding exception: these infants do not gain weight as do colic infants at home who receive individual attention. When this syndrome manifests itself, the nurses and voluntary aides are alerted to the added emotional needs of the infant, and formula alterations are made only when the infants fail to respond to this increase in personal attention.

While it is well known that there is an expected drop in hemoglobin and red blood cell counts in the first three months of life and then a spontaneous rise, we have observed that the limit of this depression is rarely under 10.4 gm. (Sahli) in the average case.* Treatment of these physiological anemias is not undertaken, as pointed out in Table 5, unless the infant fails to thrive.

Table 6 gives the frequency of infection and diaper rashes by diagnosis rather than by case. Since the great majority of these infants remain on an average of four months in the institution, they are liable to repeated attacks of respiratory infection and to recurrences of diaper rashes. In reviewing our data, we felt that the frequency with which the diagnosis was made in the various groups was more significant than a case tabulation.

Comment

DURING THIS study our chief interest was in the nutritional response of the infants to the formulas offered, which differed only in the type of carbohydrate. Therefore our attention was centered upon weight and growth increments, hemoglobin values, incidence of nonspecific enteritis, and feeding problems.

There was no statistically significant difference in the over-all weight curves; however, further analysis did demonstrate that in the average weekly weight gains there was a noticeable variation. **Table 3 shows that during the first month of observation the average weekly gain for honey-fed infants (Group A) was 176 gm.,** for the infants who received Dextri-Maltose No. 1 (Group B) it was 167 gm., and for the infants fed Karo (Group C) it was 133 gm. This is almost identical with the average weekly weight gain chronologically, which for infants up to one month of age was for Group A, 179 gm., Group B, 167 gm., and for Group C, 130 gm. It should be noted that this initial advantage in average weekly weight gain of the honey-fed group was subsequently surpassed by the Dextri-Maltose group, but not by the Karo group.

One of the explanations for the poor weight gain of Group C during the first

* References 10 and 11.

Table 5.—Nutritional Morbidity

Observation Period	1st Wk			2d Wk			3d Wk.			4th Wk.			2d Mo.			3d Mo.			4th Mo.			Totals		
Groups	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1. Regurgitation and/or vomiting (without other illness)	2	0	2	0	0	5	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	3	2	8*
2. Poor weight gain (refusal of adequate intake)	1	0	2	0	1	10	0	1	7	1	1	4	0	0	0	0	0	0	0	0	0	2	3	23†
3. Anemia ††	0	1	0	0	1	2	1	0	3	0	0	1	1	4	1	0	1	1	0	0	3	2	7	11
4. Eczema	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	1	0	1	3	1

* Formula discontinued in 1 instance because of persistent regurgitation and vomiting.
† Formula discontinued in 14 instances because of failure to accept adequate intake.
†† Diagnosis entertained only when low hemoglobin was associated with failure to gain and/or to do well.

Table 6.—Morbidity Rates*

Observation Period	1st Wk			2d Wk			3d Wk.			4th Wk.			2d Mo.			3d Mo.			4th Mo.			Totals		
Groups	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1. (a) Respiratory infections	9	4	17	15	8	11	9	11	7	21	23	24	13	14	8	14	6	2	2	10	1	83	76	70
(b) Respiratory infections plus parenteral diarrhea	2	2	1	0	1	3	2	0	2	0	1	0	1	0	1	0	0	0	0	0	0	5	4	7
2. Diaper rashes	10	6	8	9	6	16	4	2	6	6	10	5	14	4	8	1	2	9	2	2	0	46	32	52

* Incidence by frequency of diagnosis, not by case.

month is apparent in a study of the comparative incidence of nonspecific enteritis between the three groups.

The total number of cases did not vary too much; there were 35 cases of nonspecific enteritis in Group A, 33 cases in Group B, and 40 cases in Group C. By far the highest incidence of this condition occurred in Group C infants during the first two weeks after Karo was introduced. It was particularly high in the second week, around the time when the formulas are concentrated and the carbohydrate is raised from 2½ to 5% by volume. Within the first two weeks after the formulas were introduced, honey-fed infants (Group A) had 18 cases of nonspecific enteritis, Dextri-Maltose-fed infants (Group B), 19 cases, and Karo-fed infants (Group C), 33 cases.

Still another explanation for the relatively poor weight gain in the Karo-fed infants is in the incidence of feeding problems other than enteritis. It was never necessary in either the honey or the Dextri-Maltose group to discontinue the formula because of persistent regurgitation, vomiting, failure to gain, or inacceptability, but this was necessary in 15 instances in the Karo-fed infants (Table 5). It was noticed that failure to gain when not due to emotional factors was almost frequently due to inacceptability. Most infants responded avidly to honey formulas, and while they responded well to Dextri-Maltose formulas, their enthusiasm for the latter was not as great.

We have taken advantage of this ready acceptability of honey in managing prematures whose weights, despite adequate caloric offerings, have remained stationary for a number of days. This, of course, is not an unusual occurrence with prematures and frequently, with no alteration in formula, they suddenly "take hold" and begin to gain. Honey was added to the formulas of 16 of these infants, and in 6 there was an immediate and sharp increase in the rate of weight gain.

In linear growth also, the honey and Dextri-Maltose groups did better than the Karo infants, and it is probable that the explanation for this is the same as that for the superiority in weight gain previously discussed.

With respect to red blood cell

counts and hemoglobin averages, honey was superior to Karo, but not quite as satisfactory as Dextri-Maltose (Table 4). Two of the honey-fed infants required iron therapy for physiological anemia, while seven of the Dextri-Maltose group and 11 of the Karo group were so treated (Table 5). This is probably significant, especially since in the honey group there was a higher incidence of respiratory infections (which tend to induce secondary anemia) than in the other two groups, particularly Group C (Table 6).

The incidence of respiratory infections was somewhat higher in Group A than in the other two groups, while the incidence of diaper rashes was approximately the same in all groups.

Summary and Conclusions

A TOTAL of 387 infants were divided into three groups (A, B, and C) and offered isocaloric formulas reinforced with honey, Dextri-Maltose No. 1, or Karo. Group A infants received honey-supplemented formulas, Group B formulas were supplemented with Dextri-Maltose No. 1, and Group C formulas contained Karo.

Honey-fed infants were superior to Karo-fed infants in respect to average weekly weight gains, linear growth measures, and hemoglobin values and compared favorably although were not superior to Dextri-Maltose-fed infants. Within the first two weeks after the formulas were introduced, 18 honey-fed infants and 19 Dextri-Maltose-fed infants developed nonspecific gastroenteritis.

During a comparable period of time, 33 Karo-fed infants developed this condition. Feeding problems severe enough to cause discontinuation of the formula did not occur in the honey or Dextri-Maltose groups, but occurred in 15 instances in the Karo group. Two cases of physiological anemia requiring therapy occurred in the honey-fed group, seven in the Dextri-Maltose group, and 11 in the Karo group.

It would seem from the observations in this study that honey has a definite place in infant feeding.

REFERENCES

1. Davidson, W. D. : A Brief History of Infant Feeding, J. Pediat. 43:74, 1953.
2. Luttinger, P. : Bees' Honey, New York M. J. 116:153, 1922.
3. Schlutz, F. W., and Knott, E. M. :The Use of Honey as a Carbohydrate in Infant Feeding, J. Pediat: 13:465, 1938.
4. Schuette, H. A., and Remy, K. : Degree of Pigmentation and Its Probable Relationship to the Mineral Content of Honey, J. Am. Chem. Soc. 54:2909, 1932.
5. Hoyle, E. : Vitamin Content of Honey, Biochem. J. 23:54, 1929.
6. Comby, J. : Le lait au miel chez les infants, Arch. med. enf. 29:46, 1926.
7. Lahdensuu, S. : Uber die anwendung des Honigs anstatt des Zuckers in der Saugling-sernahrung, Acta Soc. med. fenn. duodecim 15:1, 1931.
8. Muniagurria, C. : Le miel des abeilles dans le dietetique normale et therapeutique du nourrisson, Bull. Soc. pediat. Paris 29:227, 1931.
9. Nelson, W. E., Editor : Mitchell-Nelson Textbook of Pediatrics, Ed. 5, Philadelphia, W. B. Saunders Company, 1950, p. 1093.
10. Vignec, A. J. ;McNamara, H., and Barnett, H. L. : Use of a Supplemented Milk for Infant Feeding, Am. J. Dis. Child. 76:154, 1948.

Profitable Honey Pack

Mr. Doyle O. Fullerton, Cody, Nebr., has developed more honey sales through the special Holiday pack shown here. This pack contains one jar each of peanut butter and honey spread, cut comb honey, and cinnamon and honey spread. The pack is priced at $3.75.

Beekeeping in Michigan

DON P. BARRETT, Chief Apiarist
Michigan Apiary Inspection Service

THE SUCCESSFUL honey producer, when selecting a new apiary location, was chiefly concerned with the type of soil and the acres of good honey plants grown in the area. For these factors, together with favorable moisture and temperature conditions, generally added up to a good honey crop. In recent years in many areas of Michigan, agriculture practices appear to have more influence on the size of the honey crop than some of these other factors. Many of the best farming areas of our state, where in the pre-war years yields of from 100 to 200 pounds of surplus honey per colony were obtained, are now reporting yields from 30 to 60 pounds, and occasionally, 100 pounds surplus due primarily to these changes in farm practices.

From observations, most farmers in the marginal regions of Michigan apparently permit the clovers and alfalfa to remain in bloom over a longer period than do those in the better farming regions. This factor, together with better soil conservation practices of today, have resulted in larger and better honey crops now being secured in these regions.

Michigan honey plants are numerous, though most of the white honey crop is secured from alfalfa, dutch white, alsike, and sweet clover. The large acreage of sweet clover of former years has steadily declined until today it is very small and is mostly volunteer. White clover is no longer dependable in most areas. Alsike appears also to be declining in favor with many farmers sowing red clover in its place. The present incentives for growing cash crops have materially reduced the alfalfa acreage, yet records and observations would seem to indicate this legume in most regions of Michigan is now the leading white honey source.

In the northern part of the lower peninsula basswood is a heavy yielder some seasons. In a few favored areas some surplus is still obtained from wild raspberry, but, in general, the second

growth of timber makes such areas a scarcity. Milkweed was a good yielder of quality white honey in several counties in the north where it could be found growing abundantly on the hillsides and pasture lands. Since the war, very little honey has been obtained from this source probably due to lack of normal plant growth caused by disease or insect injury. Goldenrod, aster, spanish needle, and buckwheat are the principal fall honey plants in most regions.

The accompanying map divides the state into five areas: 1, Lake clay soil; 2, Morainic soil; 3,Morainic rock soil; 4, The extremely sandy Lake-bed soil; and 5, Sandy soil.

LAKE CLAY AREAS—The Lake Clay Soil has been considered for years the best beekeeping soil. However, in recent years, the reduced acreage of legumes and the early cutting of hay crops in these areas have had a decided effect on the amount of nectar available. All this has resulted in a marked decrease from former years.

The exceptions would be the lake clay soils of the northern peninsula found mainly in Chippewa, Delta, Menominee, Dickinson, Iron, Ontonagon, and Gogebic Counties. Those areas are the great clover-hay producing areas of the northern peninsula. These soils generally lie flat—the water

table being close to the surface. They almost never lack for moisture. In these counties, good honey crops have been reported most seasons in recent years.

MORAINIC SOIL AREAS—The Morainic Soils differ much in their formation, ranging from a loose—somewhat gravely or sandy soil—to a very heavy clay soil. The quality of the soil ranges from poor to very good. Those soils in this area of the better quality will support a very good growth of legumes, yet much of the good soils are interspersed with soils of the marginal or submarginal type.

Due to the glacial action which traversed Michigan, much of the surface soil is extremely variable in character within relatively short distances. For this reason it is most difficult to draw lines of demarcation separating the various types of soil in this the morainic soil area.

ROCK SOIL AREAS—Part of the soils of the northern peninsula contain such large quantities of rock deposited by the glaciers that they are unfit for farming purposes. Much of these rocky soils are due to the outcropping of the underlying rockbed. These rocky areas occur in many regions of the upper peninsula. They are more numerous in Marquette, Houghton, and Keweenaw Counties. These areas are of interest to the beekeeper only where wild raspberry is still abundant.

SANDY LAKE-BED SOIL AREAS—The Sandy Lake-bed Soils were laid down by currents on borders of glacial lakes. These soils vary in fertility in proportion to the loam or silt present. In general, the soil is poor and not too good for beekeeping.

SANDY AREAS—The sandy loam and the light wind drift sand are found in a greater or less extent throughout the state. These soils are, however, more interspersed in the morainic soil areas. The central part of the northern portion of the state, comprising parts of Antrim, Otsego, Missaukee, Osceola, Clare, Ogemaw, Montmorency, and a large part of Kalkaska, Crawford, Roscommon, and Oscoda Counties comprise the great sand plain and only limited parts of this area could be considered of value as honey producing areas.

The Easy-lift Wheelbarrow

THIS WHEELBARROW was developed by Paul W. Johnson, of Peru, Indiana. The beekeeper has only to back the wheelbarrow up to the colony, place the side grappling hooks under the bottom-board, and move off to the new location.

No fuss, no bother, as the device hooks and unhooks very easily. The rubber-tired wheel permits easy handling.

Using ammonium nitrate?

Here is One Effective Control for Robbing

CAPT. LEO W. BUNDY, Kent, Washington

Bro. Adam of England is a famous international beekeeper, who has used ammonium nitrate in handling bees.—Photo by Elcock, Sussex, England.

I'VE BEEN quite interested in the articles, pro and con, that have appeared in the past year on the use of ammonium nitrate in the smoker to generate nitrous oxide, or laughing gas, as an anaesthetic for bees. Would Gleanings be averse to allowing a chechako (that's an Alaskan's translation of "tenderfoot") to sidle into the argument?

First; let it be known that I am no professional. As a retired Army man, I began keeping bees some five years ago as an interesting hobby that would not put too much strain on an overworked heart. Much reading, necessarily, was and is, a part of all my amateurish attempts to understand bees and to work with them successfully. In spite of my foolish mistakes and blunderings, my bee yard has grown from the initial one hive to 35 colonies; and I feel that the bees and I are getting to know each other better.

About two years ago, my good friend and most enthusiastic fellow beekeeper, George Hundsdorfer, introduced me to the ammonium nitrate treatment on bees. According to George, you could get the bees to do nearly all the work connected with beekeeping except screwing the caps on the honey jars, by the judicious use of ammonium nitrate in the smoker during manipulations.

Frankly, I haven't found it quite that good; but I have found the little jar of white crystals (we use the pharmaceutical, not the garden fertilizer variety) a valuable addition to my yard kit that I throw into the back of the car when I'm ready to go bee visiting. It has so many uses that it pays its freight all the way, and I always make sure it's there. The fact that continental beekeepers have used it for 50 years is a strong recommendation. Most of them, like myself, are just hard-headed and practical enough to judge the results by the answer to the question, "Does it work?".

It does. With all due respect for the

scientific findings of Brother Adam, Dr. J. E. Eckert, Mr. Simpson, and Mr. Ribbands, I still insist that, used as suggested, it is a valuable addition to any beekeeper's kit.

Effective Against Robbing

My first conclusive use for it came last fall. I had been working on a rather weak colony of Caucasian hybrids, and in the process a little robbing was started by a colony of light three-banded Italians about 50 feet away. I threw a handful of grass over the entrance and closed them up for the time being.

I came back a half hour later to find a real robbing battle in progress. So I quickly fired up the planer shavings and rotten wood in the smoker with the six-inch nozzle that I reserve for use in such cases. When there was a good bed of hot coals, I sprinkled in a scant half of a small handful of the ammonium nitrate crystals, and set it down to "retort" for a couple of minutes.

When the smoke tendrils curling up from the nozzle started to turn a brownish sulphur color I took it up, inserted the flattened tip of the nozzle into the hive entrance, and swung it from one side to the other as I gave them three or four strong slow puffs on the bellows. Then I gave a similar dose to the battlers on the flight-board. All action stopped immediately. I brushed the bees on the flight-board into the hive entrance, put a wood block across the front, and then went over to the robbing colony and gave them the same treatment.

After about five minutes or so, I returned and removed blocks from both colonies. Bees staggered out, waltzed about a bit rather drunkenly, and then set up a fanning brigade that went to work to ventilate the hives. I watched carefully for two hours to see if there was a return of the Italians to their hive. Saw only two bees go back—and they joined the fanners instead of entering the hive. And it certainly scotched the robbers!

Two weeks later I looked over the Caucasians again and found the hive much stronger, with about half of the hive population light-colored Italians. Hoist by their own petard, the robbers had simply stayed and reinforced the hive they were robbing, and from thenceforth they defended it with the same loyalty as the original tenants.

No more robbing.

THIS SPRING I had occasion to move a few colonies to new locations that were nearby. Some were moved ten feet, others over a hundred. Here again I used the ammonium nitrate treatment quite successfully. I used it lightly because every colony had large amounts of brood. There was no apparent loss of bees or brood. A few bees did return to look for the hive in the old location; but, not finding it there, they flew back at once to the new location. Of course, had other hives been moved into the old locations they would probably have entered. So far I have not made a test of this nature.

I have also used the treatment with full success in uniting colonies. Finding one colony queenless, I simply selected a weak but queenright colony, gave them the smoke treatment, took them off the bottom board and set them on a screen, with a separate entrance, over the queenless colony. A week later I removed the separate entrance board and screen to join the two colonies without any disturbance at all.

I've just had no occasion to use the gas in actual requeening, although George insists it works nicely if you just remove the old queen, give them a few puffs of the smoke, then let the new queen run in at the entrance as they come out of anaesthesia. Sounds OK to me; but, I have always requeened by disposing of the old queen and then moving in a frame with a queen cell from one of my best colonies—brood, bees, and all. It's easy. So far I've had perfect acceptance, so why change?

Now, I've had beekeepers tell me there are many other ways of accomplishing these same results. Granted. There undoubtedly are. Still, for over 30 years I did things the Army way (rarely was that the easy way). Now, I'm lazy enough, old enough, and wise enough, to use any tool that makes the job easier. Ammonium nitrate, nitrous oxide, laughing gas, does just that. To me, that argument makes sense.

Attend Federation Meeting

Honey plants of North Jersey

Maples, Dandelions, and Apples are Good Spring Sources

PAUL L. HOLCOMBE, New Jersey Apiary Inspector

THE FIRST bloom to appear in the spring in North Jersey is the silver maple (**Acer saccharinum**). Its red blossoms appear the last of February and March in advance of the leaves.

The sugar maple (**Acer saccharum**) follows very closely, generally in March, with yellowish green pendulous flowers. The blossoms of both species are attractive to the bees, yielding large quantities of pollen and considerable clear light nectar. However, stormy weather and low temperatures often prevent the bees from flying when the trees are in bloom. The nectar and pollen when gathered act as a stimulant to brood rearing.

The dandelion (**Taraxicum officinale**) blooms in April. A solid yellow carpet sometimes appears in grass fields and lawns. The corrolla of each floret is strapshaped but at the base unites to form a short tube which holds the nectar. At night and in damp weather the head closes so that there is little visible except a protecting whorl of green bracts. The honey is a deep yellow and normally consumed in brood rearing. An abundance of pollen is also gathered from this source, provided the weather and colony strength is normal.

Apple (**Pyrus malus**) blooms the first part of May. The honey is a pale yellow with an agreeable flavor. Occasionally surplus is reported from this source.

The tulip tree (**Liriodendron tulipifera**) is one of the handsomest of American ornamental trees, growing in a conical form, offering an extensive shade and putting forth in May and June an immense number of large greenish yellow flowers. There are six large yellowish-green petals, each of which is marked at the base with an irregular cresent shaped, bright orange yellow spot. The honey obtained from the tulip tree is of a reddish color and very thick, resembling molasses. It has a rather pleasing flavor.

The tulip tree is host for an abundance of plant lice in late summer, which furnishes considerable honeydew. The tree is found scattered through all parts of North Jersey much sought after for its wood which is used extensively in making baskets for handling all kinds of fruits and vegetables. It is considered a quick growing tree mostly propagated from wind-born seed, as it is not easily transplanted.

Bees gathering nectar from white clover.

Alsike clover (**Trifolium hybridum**), was introduced in this country from Sweden, where it was supposed to be a hybrid, a cross between white clover and red clover. Later it was accepted as a distinct specie. The bloom appears about June 1 and continues throughout the month. It was sown extensively by farmers for pasture and hay around 1907, furnishing wonderful bee pasture. It was not uncommon for colonies to average 100 sections of No. 1 comb honey during the blooming period of alsike clover bloom. It will reseed itself if given a chance. It is still being sown in some areas where alfalfa clover is not adapted.

Haying practices have also changed. The clover is now cut and baled with mechanized equipment before all the clover blossoms are opened. The quality of hay is improved but the short period of bloom does not permit

the bees to gather large amounts of nectar as was possible in years past when haying was extended over a period of four to five weeks. During the longer period a certain amount of alsike seed would shatter and fall to the ground, reseeding itself.

White clover (**Trifolium repens**) is familiar to everyone since that plant finds a congenial habitat in the vicinity of human dwellings. It carpets the lawns, fringes the paths and roads, and is common in fields and pastures. The delicious white honey from the clovers is considered excellent.

The sumacs (**Rhus typhina**) is a large brush type of plant blooming in July and is found in various waste places, a short-lived bush. It is reported by some beekeepers to yield nectar abundantly.

Rhus Glabra is sometimes called upland sumac and scarlet sumac. This specie is an irregular branched shrub, seldom more than eight feet tall. It blooms the last of July. During normal weather the bees will gather a large surplus of honey from this plant. It is found in unfarmed areas and along fence rows. The honey is greenish yellow, having a very pronounced flavor of its own.

Boneset (**Eupatorium perfoliatum**) sometimes called thoroughwort and (**Eupatorium purpureum**), common name Joe-Pye weed, are of the same genius. These plants bloom in August yielding a dark red honey, mostly used by the colony to maintain brood rearing. They grow in heavy loam and appreciate plenty of moisture while blooming.

Common milkweed (**Asclepias syriaca**) is considered a noxious weed by the farmers, as it is difficult to eradicate because of its root system which goes down to a depth of eight to ten inches. The plant blooms in late August and September, produces an amber honey generally consumed in brood rearing.

Goldenrod (**Solidago grannifolin** and **Solidago rugosa**) are found throughout North Jersey in waste places and abandoned fields, yielding a very golden-colored honey of good quality in September. It is excellent as winter food for the bees.

(**Aster eridoides**) commonly known as frost weed, yields a very light honey in October. When bees are working this plant a pronounced odor is noticeable in the bee yard, disappearing after the honey has been stored in the comb and capped. It granulates very rapidly. This feature is sometimes objectionable where bees are confined to their hives for a long period during severe cold weather. However, where bees are able to fly occasionally, no dysentery develops.

In summarizing the honey plants of North Jersey, there are a number of plants not mentioned in this article which do furnish a certain amount of pollen and nectar. They may make their appearance one year in three or five. No doubt the seed lies dormant in the soil until the temperature and moisture are right and the proper time for their germination.

Some of the wild plants have insect problems, various plant diseases sometimes take their toll, while others build up immunity over the years. Such plants have been tried and tested by nature's own methods.

Ark Valley Beekeepers' Association is Formed

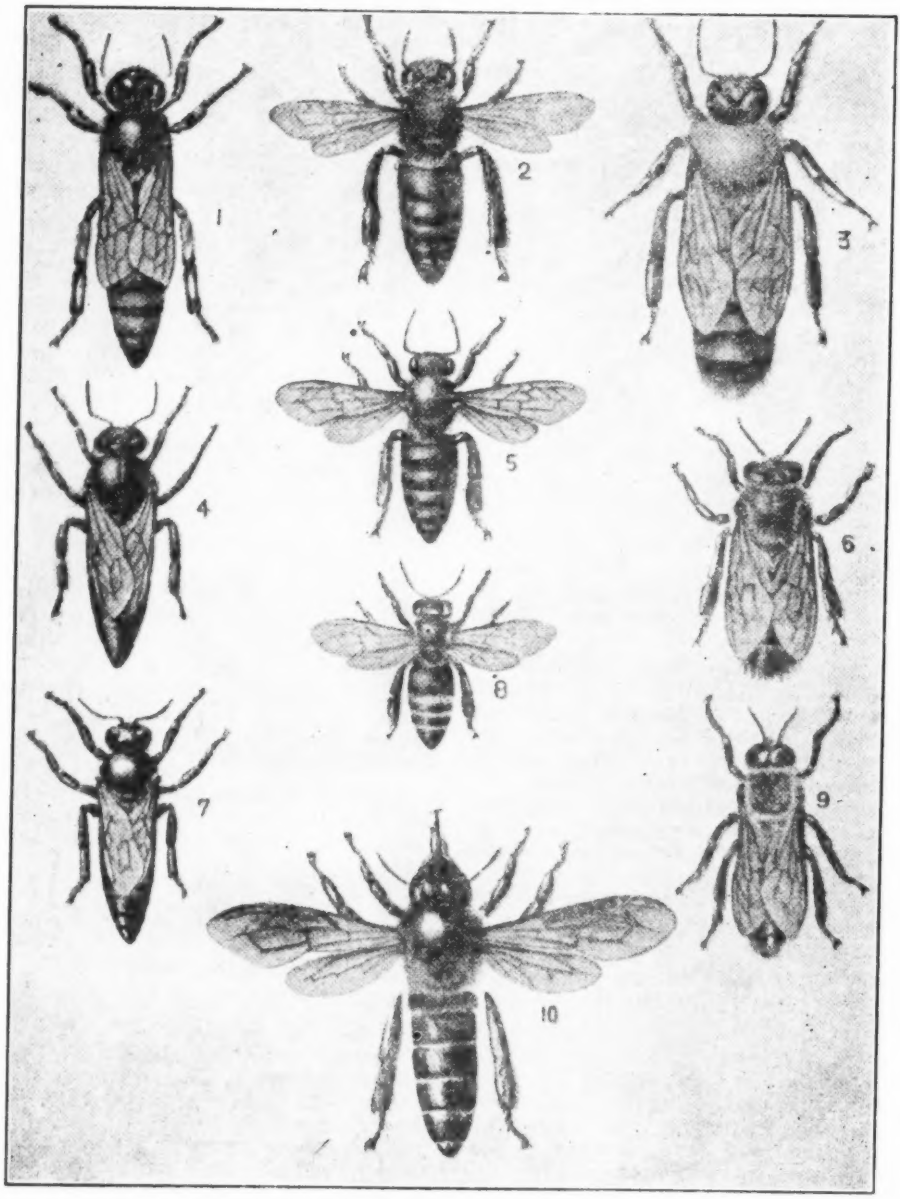
AT A MEETING called in Mulvane, Kansas, on Sunday November 14, 1954, the beekeepers of the Ark Valley District of Kansas voted to re-form and to re-activate the Ark Valley Beekeepers' Association. A Constitution, stating in part, ". . . .in order to promote the Apiary Industry of this district of our State, and to provide for organized action to that end . . . ." was adopted by the assembly. Mr. Leroy Churchman of 3227 Park Place, Wichita, was elected President; Mr. Shirley Sims of Mount Hope, Vice President, and Mrs. Emory R. Webb, Route 4, Winfield, was elected to the post of Secretary-Treasurer in the newly formed Association.

The enthusiasm and sincerity of all those attending the meeting gives promise that the success and popularity of this District Association will continue to grow. It is the intention of the executive board that each regular meeting shall have a planned program calculated to catch and hold the interest of all who attend.—Mrs. Emory R. Webb, Sec.

B & 2 LIBRARY

Bees of India

C. N. SHIVAPURI, Jaipur, India



The four species of honeybees (after Gosh, Pusa Bulletin 46)

1. Queen
2. Worker
3. Drone of Apis mellifica L.
4. Queen
5. Worker
6. Drone of Apis indica F.
7. Queen
8. Worker
9. Drone of Apis florea F.
10. Worker of Apis dorsata F.

Photo by Sadar Singh

INDIA IS THE ORIGINAL home of the honeybee. Four kinds of honeybees are found within the border of our vast Empire, surrounded by oceans on the three sides and by the mighty Himalayas on the North. The following bees are usually found.

1. Apis Dorsata (Giant Bee)
2. Apis Indica
3. Apis Florea
4. Malipona

1. This giant bee **(Apis-Dorsata)** is found all over India, excepting the higher slopes of Himalayas, and other mountains over 4,000 feet. This bee makes a single comb sometimes as big as a door with six to eight inches in thickness and yields 100 to 200 pounds of honey from one comb. It is very vicious and offers mass attacks which are very dangerous and has been known to cause death. It is migratory in habit. It sometimes leaves the comb when a honey flow is on, when there are eggs, larvae, etc., in the brood comb. It is an open worker.

Much research is needed before we can be sure that it can not be domesticated. So far we have not been able to domesticate this bee, but we in India are getting a very large percentage of this honey in our local market. The Alwar State Apiary is trying to find ways and means to get good pure, unadulterated honey from its combs, without killing this bee.

2. **Apis Indica** is the younger sister of **Apis Mellifica** (the Italian bee). It is a little smaller than **Apis Mellifica** but has the same habits, responds to domestication easily and very well. It is found all over the higher slopes of Himalayas and other mountains not above 10,000 feet; a smaller sister is the "plain variety" of **Apis Indica** which is found all over the plains of India, especially in U. P. and in South India. It yields first class honey and in good quantity, too.

The most unfortunate part is that Indians are not interested in honey or the bee, although in all Asiatic religions (Hindus, Muslims, and Christians) honey holds a very high place, and it is said that there were rivers of honey and milk flowing in India in olden times. Literally it means India produced a lot of honey and milk. With our apathy towards bees and beekeeping, 80 per cent of the people in India (the original home of the honey bee) have not seen pure honey in their lives and I feel our early death and infant mortalities are due to this fact alone.

3. We have yet another bee called **Apis Florea.** It is a very small bee which is an open worker and is found in low bushes. Its honey is very good, the quantity is very small, and as such is the case, it is economically unsound to keep these bees.

4. There is a fourth bee which does not belong to the Apis class, but gathers honey. It is called **Malipona.** It is a very small bee and gathers hardly an ounce of honey.

5. So far, as it is known to me, the Italian bee has never been tried in India seriously for various reasons. The most important ones being:

a. Import cost of these bees.
b. These bees have been known to have various diseases which are non-existent in India and we are afraid lest with the import of these Italian bees, we might import various diseases as well.

●

"The wifes part owner".

XUM

Let's talk about honey plants

HARVEY LOVELL, University of Louisville, Ky.

Winter Honey Plants

IN LATE December and early January there are few places in the United States where honey plants are blooming freely, except in the southern third of Florida. Across our northern states the bees are clustered on the combs keeping the queen and themselves as warm as possible as they eat the honey the beekeepers have left for winter stores. In the southern half of the United States honeybees fly occasionally whenever there is a warm day throughout the winter. Such cleansing flights make it easier to winter bees since they are less apt to have dysentery.

This year we have had an unusually mild November in Kentucky and adjacent states and chrysanthemums and wild asters have bloomed on into December. Actually there is one wild shrub which is classified as a winter-bloomer since it never flowers until after all the deciduous leaves have fallen from the trees and bushes. This is of course the witch-hazel (**Hamamelis virginiana**). It occurs from southern Canada south to Georgia, Tennessee, and Missouri. In the southern part of its range it opens its yellow petals in late November and December whenever there are a couple of sunny days with temperatures in the 50's or low 60's. In the more northern part of its range it blooms a month to six weeks earlier. It is an insect-pollinated species and is supposed to secrete nectar. Last year I bated 20 to 30 flowers with drops of honey several times until I had my bees visiting the flowers freely on warm days. However, when they used up the bait, they hovered over the bright yellow flowers but visited them only briefly. Evidently the amount of nectar being secreted in my yard, at least, was inadequate to hold their interest.

A Warm Fall. Whenever there is an unusually warm fall, many spring flowers bloom at least sparingly. These are short-day plants; that is, plants that bloom when the days are shorter than the nights. Many spring fruit trees, such as plums, cherries, and pears, showed some bloom this fall. These buds are formed in the late summer and the extra warm weather caused some of them to open ahead of their time. Forsythia, spiraea, and Chinese honeysuckle also bloomed here and there. These three shrubs are often winter bloomers in the central states and whenever there is a week or ten days of warm weather scattered flowers burst into bloom.

Chinese honeysuckle blooms all winter whenever there are several warm days.

The Southern States. In Arkansas, Tennessee, and Virginia, many trees start to bloom on the first warm days in January and it is common for a beekeeper to find his bees bringing in pollen from maple or elm, the first or second week of the new year. I urge

any of my readers to write and tell me when they first observe their bees with pollen in 1955.

Still farther south along the Atlantic Coast north to the Carolinas the Gulf Stream warms the coastal belt; along the Gulf of Mexico the ocean also tempers the climate; in the lower Rio Grande Valley of Texas, and in southern Arizona and California a large variety of flowers bloom in the winter. I visited Charlestown, South Carolina, in late January recently and was surprised to find many flowering shrubs in bloom including camellias, poinsettias, etc. Bees can work all winter along the coast of that state except for occasional cold spells.

White Spanish needles (Bidens pilosa) blooms all winter in the orange groves of central Florida where it furnishes the bees a reddish honey which builds them up for orange blossoms. Pennyroyal **(Satureja rigida)** gives a winter honey flow in the sandy barrens of many parts of Florida in January and February. Last spring I found pennyroyal still in bloom in late March near DeLand, in central Florida, but so many other plants were in bloom at the time that bees were no longer interested in it. The beautiful cherry laurel **(Prunus caroliana)** with the evergreen leaves of a laurel but the flowers of a cherry is a winter honey plant along the Gulf of Mexico. I found it in full bloom in late January in southern Alabama.

Pink mint (Stachys drummondii) is a winter honey plant in the Rio Grande Valley where it blooms from January 10 to March 10 according to E. B. Ault and occasionally produces a small surplus of light honey with a minty flavor. In southern California the flow from some species of eucalyptus comes in January and February but it is often too rainy for the bees to fly much. So you northern beekeepers as you sit before your cozy fire and watch the snow pile up over your hives, remember that in the deep South bees are busy visiting flowers even in the winter.

Mr. Albert Reiner, Box 111, Parryville, Penn., writes me that he plants a lot of trees and other plants for his bees. He would like to obtain some seedlings of the Japanese pagoda tree which I described in the September Gleanings. Anyone having seedlings of this attractive bee tree, please write Mr. Reiner.

A Sensible Approach to the Nosema Problem

A Better Understanding of Nosema is Given

C. F. SAXE, Meredith Center, N. H.

NOSEMA DISEASE has caused loss in Australia as well as in the rest of the beekeeping world. Fortunately, the research officers in Australia have not been inclined to seek refuge with one of the new drugs on the market but have given the matter careful thought.

Langridge points out early in his discussion of Nosema that, "temperature has a profound influence on the course of the disease". The disease develops most rapidly at temperatures a few degrees below normal brood-rearing temperature. Thus, "periods of cold, damp weather aggravate or may precipitate the disease". Such conditions lower brood-rearing temperatures and the cycle begins.

The most interesting phase of the article settles around an experiment conducted by the author. A colony infected with the Nosema organism was placed in a "sun trap". This was a location between two buildings where the bees received more than a normal amount of sunlight and were well protected from the elements. "Incidence of the disease in this hive fell from 80 per cent infection to zero in about four to five weeks."

With such a good understanding of Nosema it is unfortunate that the article which follows Langridge's in the Australasian Beekeeper goes to extremes in recommending a method of cure for Nosema (incorrectly termed "infectious dysentery"). However, both authors are to be commended for advising more sound methods of control than the witchery of drugs.

Reference: Langridge, D. F. Nosema Disease in Bees. The Australasian Beekeeper. 56 (3): 81-83. 1954.

Well begun

MRS. BENJ. NIELSEN

Aurora, Nebraska

Honey Bran Pancakes

Two and ½ cups milk, 2 cups prepared pancake mix, 2 tablespoons honey, ½ cup ready-to-eat bran, and 2 tablespoons melted shortening.

Add milk to the pancake mix and stir only until combined. Stir in honey and bran and melted shortening. Bake on hot, lightly greased griddle, turning only once. Yield: 16 medium sized pancakes.

Start the day right with a honey-way breakfast.—Photo courtesy Kellogg Co.

REMEMBER HOW Grandmother used to admonish, "Well begun, half done."? This was certainly true as applied to the breakfasts grandmother's age deemed necessary. The "safe" fairly groaned with pies, doughnuts, pastries of many kinds—and ham or sausage and fried potatoes, in addition, was accepted as the order of the day. While most of us do not start our day off with such heavy fare nowadays, nutritionists are agreed that breakfasts should be heartier than the quick roll and coffee starter that so many sleepy eyed devotees down.

Appetites are laggard in the early morning, especially if there are midnight refrigerator raiders in the household. (Does that happen at your house?) Why not try prodding those lagging appetites with tantalizing odors? And, believe me, there are no more tantilizing odors than those that emanate from honey-way breakfast treats a-cooking on a frosty morning. Just try honey griddle cakes, rosy glazed apples, or honey-way waffles and see what happens when their heavenly fragrances waft from kitchen confines! And be prepared for seconds, too! Even when I use a prepared griddle cake mix, I "doctor" it with honey. Quick, easy, and good!

Let honey help supply that quick energy needed in the early morning.

Honey Griddle Cakes

Two beaten eggs, 2 tablespoons honey, 2 cups sour milk or buttermilk, 2½ cups flour, ½ teaspoon salt, 1 teaspoon baking powder, 1 teaspoon soda, and 2 tablespoons melted shortening.

Combine eggs and honey; add sour milk and flour, sifted with salt, baking powder, and soda. Add shortening; beat well. Bake on ungreased griddle. Makes 10 cakes.

Honey Cinnamon Apples

Combine equal parts of honey and water, add ¼ to ½ cup "red hot" cinnamon candies and bring to simmering stage. Drop in apples which have been peeled and cored. Simmer gently until apples are tender, spooning liquid over apples frequently. To reduce cooking period apple rings may be used.

Honey Waffles

Three beaten egg yolks, ¾ cup buttermilk, 2 cups flour, ¼ teaspoon salt, ½ teaspoon baking powder, ½ teaspoon soda, ¼ cup honey, ½ cup melted shortening, and 3 stiffly beaten egg whites.

Combine egg yolks, honey, and buttermilk; add flour, sifted with salt, baking powder, and soda. Add slightly cooled shortening; beat smooth, fold in egg whites. Bake on ungreased waffle iron. Makes 4 to 6 waffles.

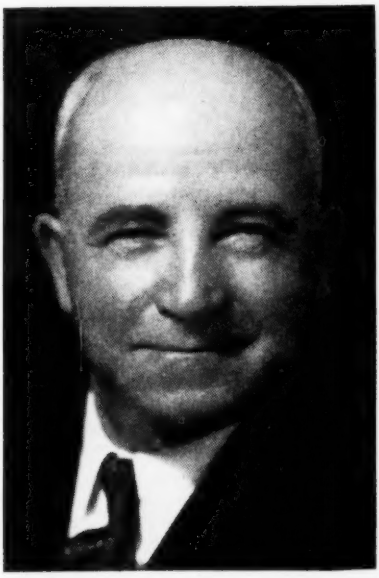
How many can you identify?

See Page 59 for the Answers

1. .....

2. .....

3. .....



4. .....

This is the first in a series of picture quizzes. Old and new pictures will be used to make identification difficult.

Editorials

A New Year Means a New Start

ONE INTERESTING thing about life is that each morning we are confronted with a new day in which to continue our tasks of the previous day, or to make a fresh start in some line of work that may be somewhat new to us. Even though we have made mistakes, we can make a new start each day.

The same is true of each new year. Most of us beekeepers make mistakes in the course of a year, some of them rather costly. The beginning of a new year gives us an opportunity to review and evaluate activities of the past year with a view of correcting our mistakes during the new year.

The old slogan "Be sure that you are right, then go ahead" applies to beekeeping. It isn't always easy to determine what is the right thing to do. If, however, we draw from past experiences and seek guidance from authoritative sources we are not likely to make many mistakes.

A New Year, 1955, is breaking over the horizon. It may bring boundless opportunities for the future of our industry. Let's make the most of it.

We wish beekeepers everywhere a Happy and Prosperous New Year.

On to Chicago

THE CITY of Chicago is said to be the top of the convention world. It is the second largest city in the United States and has the reputation of being a friendly city. The stiffness which occasionally mars a visit to a strange city is lacking. This year Chicago will have more than twelve and one-half million visitors from over the world.

Beekeepers have the reputation of being a friendly, well-behaved group of people. A few years ago during the national meeting held in Biloxi, Mississippi, the management of the hotel said that of all the different groups of people that met there for a convention, the beekeepers were the most desirable. We feel quite sure that the Sherman Hotel, where the meeting is to be held, will feel proud to have us as their guests.

We believe that the beekeeping industry is progressing, even though difficulties in the way of poor honey crops have been experienced recently. Beekeeping is an essential branch of agriculture. Farmers and fruit growers must have honeybees in order to pollinate the blossoms to secure maximum crops of fruits, vegetables, and legumes. We must have more bees.

Honey prices have advanced somewhat during the past two years. This is an incentive for beekeepers to produce larger crops of honey. The demand for honey is increasing. We must have more honey to supply this demand.

There is important work to be done at the Chicago convention. Let us attend the meeting January 25-28 and cooperate in every possible way to make it a success.

History of Beekeeping

NOT SINCE the late Frank C. Pellett compiled the "History of American Beekeeping", has anyone attempted to record important beekeeping events. To answer this need, Gleanings will present a series of articles on the history of bee-

keeping that will be worldly in scope. The series start in this issue.

Starting with the oldest record on beekeeping in 15000 B.C., the series will carry through to the present. A large number of "Firsts" will be mentioned, including the first shipment of package bees, the first attempt to rear queens, as well as many others.

Mr. George P. Georghiou, who received a Masters Degree in Economic Entomology at Cornell University in June 1953, has prepared this series of articles in chronological order. He compiled the information in 1951 under the guidance of Dr. E. J. Dyce and the late Dr. E. F. Phillips.

Mr. Georghiou has written for Gleanings on occasions, describing his experience with Cyprian bees and beekeeping generally on the Island of Cyprus. He has recently returned to Cyprus as an entomologist for the Department of Agriculture.

Should We Have Interstate Bee Barriers?

DURING RECENT years barriers have been set up in some states to prevent the entrance of honeybees on combs. Such barriers work a hardship on some beekeepers, especially commercial beekeepers living near state lines. In order to find pasture for their bees, they have out-apiaries scattered in all directions within perhaps a radius of 20 or 30 miles, in which case it would be difficult to avoid moving some bees on combs across state lines.

A farmer with some hives of bees may have occasion to move from one state to another. He can move himself and family, together with his belongings, including farm animals but if there is a state barrier against the movement of bees, what will he do with them? Will he sell them, shake the bees into packages and burn up the hives and combs, or leave them where they are, hoping some interested person may take them over?

It is perfectly proper **to prevent** the movement of bees from one state to another, or even from one county to another if they are diseased. However, if hives of bees have been inspected by an authorized state bee inspector and found apparently free from brood and adult bee diseases, it should be possible to move the bees into another state, provided the bee inspector of the state into which the bees are moved, is duly notified, so that he can inspect the bees after they reach their destination.

In our opinion, state lines should not constitute barriers to the movement of hives of bees that have been inspected and found apparently free from disease. There should be a uniform interstate bee law which would make it possible to move colonies of bees free from disease into any state easily and without any red tape, provided the beekeepers who move the bees comply with interstate requirements.

The Coming Generation Should Use Honey

IN A RECENT issue of Poultry Industry, formerly Northeastern Poultryman, there is an article, "Don't Worry—Keep Busy". The article goes on to say that the poultry business has suffered somewhat during recent months because of the falling prices of eggs. However, there is a brighter side to the picture, namely, in this country there is a birth every eight seconds and a death every 24 seconds which means a three to one gain in daily population. These babies are potential future customers for the poultry industry.

The same can be said for the future of the beekeeping industry. We have said and still say that more attention should be given to educating the young people, the coming generation, in the use of honey each day. Eating honey is a habit. Practically everything we do in life is based on habit. If honey is on the table at every meal and adults use it on their toast, breakfast food, also to sweeten tea and coffee, the children will follow the example and become regular users of honey—Nature's oldest and choicest sweet.

From the standpoint of a steady i n c r e a s e in population, and inducing young people to eat honey, the beekeeping industry has a bright future.

XUM

FROM Foreign LANDS

What's New in Royal Jelly.

IN ORDER to duly appreciate the progress made in the field of royal jelly, we must consider the research work done on this subject.

Who was the first to call it "royal jelly"? The substance was named in 1884 by a scientist named Perez.

Who was the first to talk of royal jelly as applied to the human organism? According to Bonjovanie, it was Dr. Bordas, assistant to Edmond Perrier at the Museum of Natural History. Dr. Bordas found a connection between its qualities on cellular metabolism and the properties of radio active substances.

According to Alphandery, only in 1928 did two professors of the University of Toronto, Canada, Banting and Jackson, offer the question as to whether it would be possible to use Royal Jelly in human medicine. They did not publish any special works on the subject.

During the years of 1928 through 1948 there doesn't appear to be any applications of royal jelly to dietetics. However, in 1936, through 1941, there were many published reports on the composition of royal jelly. Readers are urged to read "Bee Facts".

What are the latest books and other publications concerning the effects of royal jelly on living organisms? In 1948 Dr. Thomas S. Gardner, chemist of Hoffman-LaRoche, Inc., in Nutley, New Jersey, opened a series of investigations. A review of his work can be found in the column "Bee Facts" in the November 1953 issue of Gleanings.

Mr. Cronier reports that Dr. Chauvin of the Bures-sur-Yvette Laboratory was the first in France (before 1953) to launch experiments under medical control. He intends to publish his results soon.

Mr. Alin Caillas of France has published some of his experiences with royal jelly in some of his books on beekeeping. His investigations and reports concern the nature, benefits, and means of production. Dr. G. F. Townsend and C. C. Lucas reported on the "Chemical Nature of Royal Jelly" in the Biochemical Journal. The latest contribution was by M. V. Smith of the Ontario Agricultural College, who reported in the December issue of Gleanings on the latest techniques of producing, removing, and storing royal jelly. Cornell University has recently announced the start of investigations on the subject.

Documentation Recente Sur La Gelee Royale, Chapter one. Sept., 1954.

Honey and Burial Services.

IN ANTIQUITY bees were looked upon as mysterious beings. Honey and wax belonged to the burial service. Many countries placed honey with their dead.

Honey has been used as a sacrifice to underground gods and thereby became a symbol of death. Some nations preserved and buried their dead in honey.

On the Island of Crete the dead were buried in this fashion at the time of Homer. Alexander the Great was buried in honey. In old Rome, bodies of poets were laid in honey before they were buried. King Agesilaos of Sparta died on foreign soil, and his soldiers bedded him in honey and brought his casket home. Today this custom is still observed in parts of China and in Africa along the Niger.

Gazette Apicole. October 1953.

Dead Brood in Spring.

DR. SCHULZE of Berlin believes that the reason bees throw out larvae in spring is not because of cold but because of the lack of pollen. It is not uncommon for bees to become short of pollen during a long period of bad weather in the spring of the year.

Die Bienenzucht in Spiegel.

Bee Facts

(A Digest of Scientific Research)

EFB Control.

"THE TREATMENT of EFB with antibiotics in the forms of dusts is easily performed and is superior from the standpoint of stability of the antibiotic added," reports Dr. Thomas A. Gochnauer of the University of Minnesota. "However," he added, "early treatment is most essential to curb the infections and maintain effective colony strength."

In view of this, streptomycin or terramycin should be fed in late May or early June to suspected colonies, depending upon the climate and the season. The amount fed will be nearly a full gram although the strength of the dose will depend on the strength of the colony and the amount of disease present.

"Beekeepers with apiaries free of AFB may choose to feed Vet Strep, obtainable at local drug and veterinary supply stores, at the rate of a 5-gram bottle of Vet Strep to 10 to 20 gallons of syrup. If syrup feeding is not possible, a dry powder of TM-5 and powdered sugar in equal amounts may be prepared and dusted over the colonies as already described. If TM-5 is not available, TM-10 may be substituted, in which case one part of TM-10 to three parts powdered sugar may be used."

The Minnesota scientist urges care in application of the dust and to watch for any possible damage to the colony. A weak or lightly diseased colony doesn't require as much dust as a strong or a badly infected colony. When disease is present, weekly treatments are probably better than every other week.

Gochnauer, Thomas A., European Foulbrood Disease in Minnesota. II Treatment of Bee Diseases with Dry Antibiotics. The Minnesota Beekeeper. Vol. VII, No. 4. pp. 2-5. October 1954.

Effect of Fertilizer on Bees.

THE AUTHORS dusted a pasture of 12 acres containing largely white clover (**Trifolium repens**) with DDT plus superphosphate at the rate of two pounds of actual DDT per acre. They were seeking control of grubs which cause extensive loss in New Zealand.

An experimental apiary nearby enabled the authors to check on the effects of the dust. It was concluded that such dusting caused only negligible losses to bees in the vicinity. It was very definitely concluded that DDT repelled bees for some days after application (other investigations show that superphosphate has no such repellent effect). Field bees collected from the dusted area did not show a high mortality and no adverse effects were noticed in the hives.

The paper contains a good discussion and a general review of the DDT problem. Sixteen references are included.

Palmer-Jones, T., F. A. Bartrum, I. W. Forster and D. L. Harrison. Effect on honey bees of DDT plus superphosphate applied as a dust to white clover pasture. New Zealand Journal of Science and Technology. 36:177-192. August, 1954.

Can Bees Count?

POLLINATING insects such as honeybees, bumblebees, butterflies, and moths have been found able to distinguish numbers if these are expressed in symmetrical figures, according to Dr. E. E. Leppik of Augustana College, Sioux Falls, South Dakota.

"This ability," the scientist points out, "seems to be dependent upon the stage of psychic development of insects and varies considerably among different groups.

"Different groups of numbers are clearly expressed in the flower types and may serve as pointers for pollinating insects to find their plants. The comparative study of trimerous, tetramerous, and pentamerous flower types provides a new approach to the evolution of flowering plants."

Leppik, E. E. The Ability of Insects to Distinguish Number. The American Naturalist. Vol. 87, No. 835. July-Aug. 1953.

Some recent experiences in the apiary

M. J. DEYELL, Editor

Jack Deyell

THE SEASONS must be changing, that is, the fall season must be extending further into winter than was the case some years ago. I can recall, about 30 years ago, when we used to feed the Root Company bees sugar syrup, that we would start feeding October 1st and would plan to have the feeding finished by the end of the third week in October.

We could not start feeding sugar syrup heavily until brood rearing had ceased. We wanted the sugar syrup stored in the cells of the brood nest from which the last brood emerged.

During the past few decades, there has been considerable brood in combs of normal colonies up until about the middle of October, consequently, we could not do any heavy feeding as we did years ago.

Feeding Sugar Syrup

This last fall it was necessary to feed some of the Root Company bees sugar syrup, as our late fall flow failed. This was the first feeding we have had to do in many years. We did not get started to feed until about the second week in November. At that time, the weather was rather cool and bees did not take the syrup very well. We tried placing the pails of syrup over the holes in the inner covers. We then tried placing the pails of syrup directly on the top bars of the frames in the brood chamber with an empty super under each cover to protect the pails of syrup. This put the syrup right down where the bees could get to it easily. The bees took it quite well, even though some of the days were rather cool.

At first we tried feeding the warm syrup in ten-pound pails, each cover punctured with 12 or 15 holes made with a two-penny nail. We found that we did not have enough nail holes in each cover, so we increased the number to 25 or 30 holes. The bees then took the syrup more readily.

Some place burlap sacks or some such material over the pails to retain some of the heat of the colonies in order that the bees may take the syrup more rapidly.

Fortunately, some Indian summer weather came after we had finished feeding and this enabled the bees to cure the syrup and get it properly placed in the combs of the brood nest for winter stores. Syrup feeding should really be done earlier in the fall.

Examining Colonies for Brood

On November 17th, colonies in this locality were carrying in pollen. One beekeeper wondered if this would induce the bees to rear brood. On November 19 I examined four colonies and found no brood. The colonies had apparently entered their period of quiescence, which in this area occurs during November, December, and early January.

Unless there is a prolonged spell of warm weather during early winter, colonies are not likely to rear an abnormal amount of brood. If and when prolonged warm weather occurs after the first of the year, queens are apt to begin laying and brood rearing will gradually increase as spring approaches.

●

Our Cover Picture

The cover photo is of Earl Kellogg, Mason City, Iowa. Mr. Kellogg used this trick of a beard of bees to stimulate interest in honey.

Live and Learn

by Propolis Pete

HELLO EVERYBODY, **Happy New Year.** This old merry-go-round that we live on has gone around again, and here we are back where we started twelve months ago. Gets monotonous, don't it?

Well, the turn of the year generally is the signal for everybody to look ahead, make new resolutions, and lay out plans for the year to come. Mostly though, the looking ahead is just wishing, the new resolutions go into the ash can before they are dried out, and the plans go haywire for one reason or another. But we pick up a little here and a little there, and some of it sticks.

Just to be different, let's look back and see if we have learned anything that could help us in the future. I know one thing that I learned, and that is that bees have to eat too. Yep, me, the wise guy, after 20 years keeping bees, let two colonies starve out right under his nose. Of course, the excuse is that I have been away a lot in the last three months, but I have been home at times, and if I was on the ball it wouldn't have happened. I just took too much for granted.

Of the rest of the colonies, six were light, but just about on the dividing line between "feed" and "no feed". So I have marked them and some warm day in the next couple of weeks or so, I'll start feeding them some dry sugar in my fancy inner covers. The book says that they should be fed before they are packed, but I have found that my way works just as well, and generally it saves time and money.

The two colonies that "konked out" on me were not very strong. The orthodox way of handling them would be to unite and feed them. I don't think it pays to unite colonies in the fall, unless there is some very strong reason for it besides being able to say that you saved the colony. What in the world is the use of putting together a lot of old bees that are going to die off in a month or so any way that you figure it. And, if you have the colonies two stories high, you have to do a lot of re-arranging to get rid of the two surplus bodies. For my part, the sensible thing to do is to salvage whatever good combs of honey and pollen there are and to start new packages on them in the spring.

Of course that takes money, but isn't it really the cheapest way to handle it? A new three-pound package will cost in the neighborhood of $5.00 or $6.00 delivered. You will have to feed them if there isn't enough honey in the combs that you saved. How much that amounts to depends on circumstances, but it won't come to more than another dollar. But the chances are that you will have a good young queen, with young bees rarin' to go, and in a fair season, enough surplus honey to pay for themselves and a bit more.

WITH TWO weak colonies united, and fed, you are going to have one weak colony next spring, and you will have to feed them as much (or more) as the new package. The bees will be fairly worn out just by trying to survive the winter, so they won't build up very quickly, and the chances are that you won't get any surplus. Furthermore there was a good reason why they were weak before you united them. The law of averages says that that reason was poor stock. To improve the stock means that you are going to spend some money for a new queen, so by the time the honey flow is over next year where are you?

Now all of the above is strictly for those beekeepers who like to be efficient and businesslike in their work. For my part, it's fun to experiment and fool around with all kinds of impossible layouts. I have told you many times of the dizzy things that I did, but I learned thereby. So, don't stop on my account.

By the way, when I packed my bees around the middle of November I peeked in some of the colonies to see what was going on. I didn't find any brood, but on every warm day I see bees getting water from my pool. I always thought that when bees gathered water they needed it either to cool the hive in hot weather, or to dilute honey to make food for the larvae when no nectar was coming in. They certainly don't have to cool off the hives in this weather. Wonder if they have started brood rearing already. They have no business to do that, but then, my bees never did seem to read the same books that I read.

A Talk to Beekeepers

Continued from the December issue.

M. J. Deyell

My Eastern Trip On To Maine

FOLLOWING THE Rhode Island meeting, I spent the night with K. W. Reese, associated with the Jepson Company of Boston. On the way to his place I had the opportunity to get a close-up on some of the cranberry bogs of Massachusetts. A number of beekeepers are furnishing bees to pollinate the cranberries. Such beekeepers have to know their business.

The following morning Mr. Reese piloted me through a maze of crossroads and traffic out on to the super highway No. 2 leading to Portland, Maine. You are actually permitted to drive 60 miles per hour on that super highway. Some travel much faster.

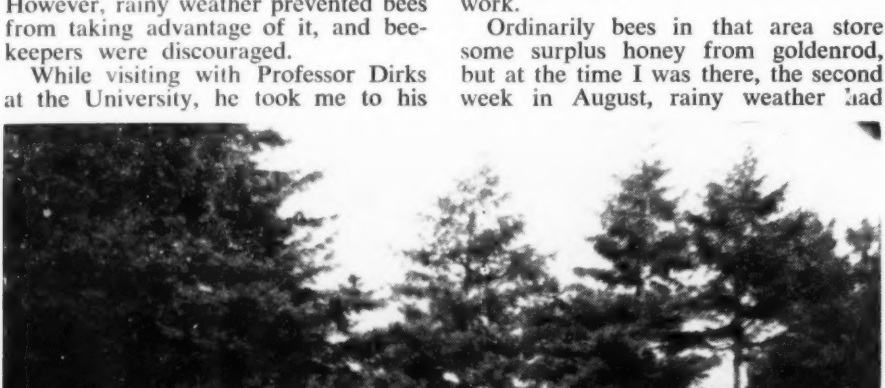
After spending a day in Portland visiting a friend, also beekeepers, I headed north for Orono, Maine, to visit Professor C. O. Dirks of the University of Maine. That is beautiful country; goldenrod was on in all its splendor. However, rainy weather prevented bees from taking advantage of it, and beekeepers were discouraged.

While visiting with Professor Dirks at the University, he took me to his experimental bee yard. The colonies appeared to be in very good condition with an ample amount of honey for winter stores. The apiary contained a scale hive for keeping records throughout the season.

There were some winter packing cases used and recommended by W. J. Sheppard, former provincial bee inspector for British Columbia some years ago. Most of these cases containing a large amount of packing, have been abandoned. However, the winters get mighty cold up in that state and some packing for hives is considered essential for successful wintering.

I had a delightful visit at the homes of Mr. R. W. Swan and son of Brewer, Maine, which is across the river from Bangor. Mr. Swan, senior, is state bee inspector and is kept busy with inspection work during summer months. The Swans have quite a number of apiaries scattered over that area and some of their bees are devoted to pollination work.

Ordinarily bees in that area store some surplus honey from goldenrod, but at the time I was there, the second week in August, rainy weather had



Professor Chas. Dirks, Orono, Maine, in the Experimental Apiary.

The roadside stands carrying honey help to create a demand for our products.

prevented them from securing any surplus and I have learned since that rains continued during the fall months. Bees in most of the state of Maine will have to be fed sugar syrup to avert starvation. It seems probable that there may be a heavy winter loss of bees.

From Bangor I traveled west through Farmington, Rumford, Lancaster, to St. Johnsbury, where I stayed overnight. Very few hives were seen along the highway. One small apiary at Hanover, Maine, attracted my attention as did the roadside honey sign which read "Pure Bees Honey". The owner of the bees was away so I could not learn much about the honey crop secured. The hives did not feel very heavy.

The scenery along Route 2 through the White Mountains of New Hampshire simply defies adequate description.

Maple Syrup and Honey

ROUTE 5 south of St. Johnsbury, an extremely scenic route, led me through the maple syrup section of the state. The roadside stands along the way displayed various wares appealing to the tourists, also maple syrup and maple sugar, as well as honey. The fact that the word honey stands out on the sign shown in the accompanying picture, helps beekeepers.

I was interested in the prices of the various sizes of honey jars. The fancy comb honey was retailing at 60c, eight-ounce jars of extracted honey at 25c, one-pound jars at 40c, two-pound jars at 75c, and five-pound pails at $1.50 each.

This sign should stop those who like comb honey.

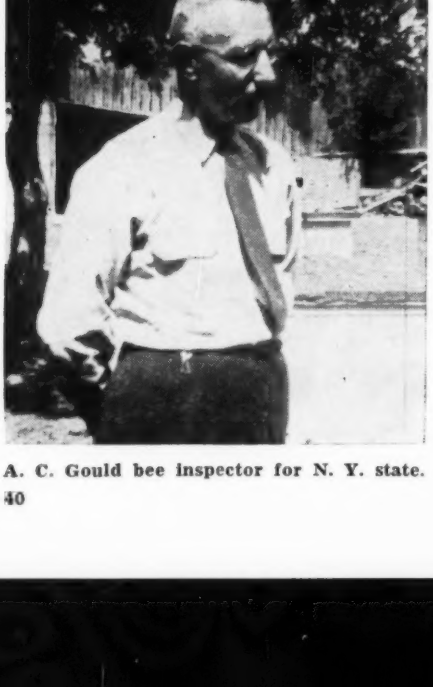
George Walthousen cheated the kids out of a ride down the sliding board.

The manager of one roadside stand, Hazen Brothers, North Hero, Vermont, said that honey sells quite well.

Empire State Summer Meeting

This meeting was held at the home of George Walthousen, which is near Schenectady. The location is ideal for such a meeting, a large beautiful yard back from the road where parents with families could turn their children loose to play. Even swings and sliding boards were provided for the amusement of youngsters.

You will note from one of the pictures, that Mr. Walthousen, the gracious host, still enjoys sliding down a steep incline. A commodius pavillion with ample seating capacity for the 300 people that attended the meeting is part of Mr. Walthousen's equipment. Summer meetings are held there periodically. Dr. E. J. Dyce and Dr. W. L. Coggshall of Cornell University, Ithaca, New York, were among the main speakers.



A. C. Gould bee inspector for N. Y. state.

I spent that night at the home of Mr. Earl Westfall of Howes Cave, New York, president of the Empire State Beekeepers' Association. The Westfalls are gracious hosts. Next morning (Sunday) I started home and drove 475 miles that day, reaching Medina about midnight.

And so ended a very enjoyable visit with beekeepers in the Northeast and key people of our industry. Strange as it may seem, I was not "all in", as some of my friends thought I would be, following such a strenuous trip. I have come to the conclusion that it isn't hard work that hurts us, but rather, a lack of variety in life and a zest for living that may tend to undermine our health.

American Honey Institute News Notes

by HARRIETT M. GRACE, Director
Commercial State Bank Building, Madison 3, Wisconsin

Radio Advertising

POOR LITTLE RADIO! Overshadowed by the attention that is lavished upon her more glamorous sister, television, radio seems to shrink into the background and hide behind the folds of her old-fashioned dress. She seems a Plain Jane next to her exotic younger companion.

But hold everything! Take another l o o k! This would-be wallflower is holding her own. Her advertisers and listeners seem most devoted to her. Surveys show that radio has lost neither listeners nor advertisers to TV. In fact, the better TV does, the better all the sister media seem to do—newspaper readership picks up and radio listenership increases. What is good for one seems to be good for all.

Advertising on your local radio station can be done in one of three ways: You can buy "spots" or short two or three minute advertisements that are sandwiched in between station breaks; you can buy network programs, ranging from a five minute newcast to a long hour program; or you can buy local programs.

The spots are the most inexpensive, but to be effective, you must buy more than one. In fact, a good radio advertising program would plan for spot a d v e r t i s i n g at specific intervals throughout the week, using some sort of theme or song to give continuity to the ads. If you plan the use of these spots, you can get excellent results from their use.

Network sponsorship is good but expensive. News broadcasts always attract listeners, and hence are a good buy for the advertiser.

Local programs always pull the best listenership, and after all, that is what the advertiser looks for. A local sportscast of a basketball game, for instance, is a good investment.

The radio advertisement should be chatty, but not wordy—after all, you pay for each word that you utter, so you'd better make it count! It should be simple, and stated clearly. The opening sentence should be short, and factual. Don't try to tell it all in one breath.

Strangely enough, in writing radio ads, you do not need to use complete sentences. Sometimes a descriptive phrase is more effective than a grammatical sentence. It saves words and reads easily. Try reading your ads out loud to see if they sound conversational, not stilted.

Cut out all big words. On every occasion, use the simplest word. In radio, there is no chance for the listener to go back and "read" it again if he didn't understand it the first time.

And scratch out all purple prose from your copy. Keep your advertisement honest and straightforward.

When you write your advertising copy for radio, steer clear of too many "s" and "th". They are hard to say.

Do use contractions, words like isn't, won't, or aren't. They are natural words, used in daily conversation, and less formal than the two words.

Certain times of the radio day pull more listeners than others. Meal times are good. From seven to eight in the morning, around noon, then from five to eight at night are high listenership times.

Women make up the bulk of the daytime listeners, a fact that should entice honey producers to advertise during the daylight hours. For it is the women who buy honey!

Such are the facts of radio advertising. Keep them well in mind when you map out your advertising program. The better informed you are as an advertiser, the more advertising value you will get from your money.

Boy Scout Book on Beekeeping

THE WELL illustrated Merit Badge pamphlet called "Beekeeping" has just come to our attention. To get a merit badge in beekeeping a boy scout must be able to handle bees and beekeeping equipment. He has to prove to his superiors that he has a thorough understanding of honeybees. Copies of this pamphlet can be obtained for 25 cents from the Boy Scouts of America, 2 Park Avenue, New York, N. Y.

A section of Chicago where the National Federation Meeting will be held.

Twelfth Annual Convention
The American Beekeeping Federation, Inc.
Hotel Sherman, Chicago, Illinois
January 25-29, 1955

Tuesday, January 25, 1955

9:00 A.M. Executive Committee. The American Beekeeping Federation, The Apiary Inspectors of America, as they arrange

1:30 P.M. Board of Directors' Meeting. The American Beekeeping Federation. Executive and/or Directors meetings of: American Bee Breeders' Association, Honey Packers and Dealers, Bee Industries Association, and other Industry organizations, as they arrange

8:00 P.M. Honey Industry Council: Mr. Alan I. Root, Chairman.

January 26, 1955

8:00 A.M. Registration

9:30 A.M. Call to Order
Invocation: Rev. John Wade Dubocq, Palos Park, Presbyterian Church
Address of Welcome: Hon. William G. Stratton, Governor of Illinois
Response: Ray Reed
President's Address: H. A. Schaefer
Keynote Speech: Alan B. Kline, President, The American Farm Bureau Federation. "Our Marketing Problems"

1:30 P.M. Marketing and its Problems
Chairman and Co-Chairman Mr. S. Joaquin Watkins and Mr. Roy Grout
Mrs. Harriett M. Grace—The American Honey Institute
S. Joaquin Watkins—The Federation Marketing Program
Harold J. Clay—The Price Stabilization Program
Chester Freeman—What the Industry Can Do to Promote Honey
Hazel Atlas—Packaging and Merchandising
Paul C. Majesty—Sales Agent Hazel Atlas Glass Co.
Robert Meloy—Research Chemist, Sioux Honey Ass'n., Sioux City, Iowa

January 26, 1955

6:30 P.M. Auxiliary Program—Mrs. Henry Schaefer, President

8:00 P.M. 500 Club—E. H. Adee, as arranged
Non-commercial Beekeepers, as arranged
Marketing Committee—State Director—S. Joaquin Watkins, Chairman

January 27, 1955

9:30 A.M. Mr. Tom Shield—How Canada Promotes Honey Consumption
Mr. Lloyd Percival—Honey as a Source of Energy
Mr. L. E. Parett—Secretary of Public Relations, Illinois Agricultural Association
Mr. Otto Pfretzschner—Colorado Promotes Honey Consumption
Dr. Edwin Anderson—Honey Candies and Honey Spreads, State College, Pa.
Dr. Gordon Townsend—Preparing Honey for Market

1:30 P.M. Research on Seed Production of Forage Legumes
Chairman: Clarence Benson, Phoenix, Arizona
Dr. F. G. Holdway, Dept. of Entomology and Economic Zoology, Univer-

sity Farm, St. Paul, Minn.
C. D. Floyd. Dept. of Entomology, University Farm, St. Paul, Minn.

3.45 P.M. Dr. Clayton Farrar, Bee Culture Laboratory, University of Wisconsin, Madison, Wisconsin, "The Need for a Better Bee"
G. H. Cale Jr., Hamilton, Ill. "Commercial Application of Genetics to Bee Breeding"

7.00 P.M. Banquet: Mr. J. W. Newton, Toastmaster, Queen Breeder, and Past President American Honey Produce League
Banquet Speaker: Dr. George W. Irving Jr., Deputy Administrator for Research, Agricultural Research Service, United States Department of Agriculture, "Research Creates Wider Markets for Farm Products".

January 28, 1955

9:00 A.M. Honey Research—Mr. R. B. Willson, Chairman Honey Utilization Committee
Dr. J. W. White, Jr., Eastern Regional Research Laboratory, Philadelphia 18, Penna.
Handling Honey: Dr. V. G. Milum, Department of Entomology, University of Illinois, Urbana, Ill.

10:15 A.M. Resolutions
11:00 A.M. Election
1:30 P.M. Bee Diseases—Professor F. B. Paddock, State Apiarist, President of The Apiary Inspectors of America, Chairman
To
3:30 P.M. Symposium Disease
Foreign—James I. Hambleton, Beltsville, Maryland
Nosema—Dr. C. A. Jamieson, Ottawa, Canada
European Foulbrood—Mr. J. O. Moffett, Colorado
American Foulbrood—Dr. T. A. Gochnauer, Minnesota

Panel Discussion
Dr. J. E. Eckert, Moderator
Mr. John Holzberlein, Colorado
Mr. Ray Reed, California
Mr. John Jessup, Iowa
Mr. J. W. Newton, Louisiana
Mr. Burel Lane, New York
Mr. Carl E. Killion, Illinois

3:30 P.M. Honey Industry Council
5:00 P.M. Directors Meeting (after early dinner)

The Rip Van Winkles in Beekeeping

J. W. NEWTON, Baton Rouge, La.

WE ARE ALL familiar and have been intrigued by the story of the legendary character, Rip Van Winkle. But why waste our time and effort to keep alive such an antiquated subject when we have literally thousands of modern up-to-date examples within our own industry.

It appears very illogical that any individual is so unconcerned about the interests, welfare, and progress of the industry, which is vital to his own success or failure, that he refuses to attend meetings of state, regional, and national organizations. Yet, the truth of this statement is so evident that it is past being alarming, it is catasthropic.

What individual beekeeper would tolerate another coming into his personal operations and dictate to him the policies and practices he must follow? The answer is, not a single one would be subjected to such encrouchments but this same individual, a "modern Rip Van Winkle," will not support any collective organization whose sole objective is to mold policies and programs that will assure continued solidarity to its industry.

No organization can successfully function without the coordination of efforts of all elements interested in any industry, so why can it be assumed that beekeeping can hurdle all obstacles and move forward with any progressiveness if its members consistently lag in lending their aid and support. It is so easy, too, for such cases as above to fall into the habit of criticizing, a criticism that has as its sole purpose, injury rather than to be of a constructive nature.

Can any such critic justify any part of his criticism if he refuses to join in with his organization and be a participant in moulding and shaping progressive steps?

It is mystifying how a few individuals can muster courage and fortitude to carry on year after year with such a meager representation of the possible membership, but they not only carry on, they have builded block by block a structure that has and is weathering all scorn and adding "Laurel by Laurel" to its history. Imagine how gratifying it would be to have a complete membership support.

Mr. Beekeeper, are you going to continue to be a Rip Van Winkle? Or are you convinced that it is time to wake up from your lethargy, get into and be a part of your State Association, and go all out in support of the Beekeeping Federation, which all in all will go a long way toward minimizing your individual problems?

From the Field of Experience

The Latest Theories on Wintering

by WAYNE KELLER, Oshkosh, Nebraska

IT SHALL BE my purpose to emphasize only those requirements not generally understood. Suppose we begin this discussion by assuming that we have the proper inside conditions, namely: a queen which should survive the winter, bees hatched from late brood, and plenty of honey according to the amount of pollen. What are you going to do with it?

Let me tell you the mistakes you might make. You might leave some supers, so that the hive is four or five stories high. The colony might move up into one of these and freeze during a protracted cold spell. The extra space will necessitate extra honey consumption, since the bees must **increase** activity when it becomes **too** cold. Increased activity will cause waste of bees, and will stimulate unseasonal brood-rearing as pollen is uncovered. The colony will use considerable honey near the cluster and be kept from moving to heavier combs because of the brood being developed. I had extra-strong colonies die under such circumstances with plenty of honey in the hive.

Another mistake you might make is to not provide an upper entrance. Circulation is very poor with a small bottom entrance in winter. The bees find it difficult to get out. You will find your upper-entrance colonies drier and stronger in spring, and working better through the upper entrance. If only a lower entrance is left, it should be large and covered with wire of the proper mesh to exclude mice. In this case the top should be tightly sealed in order to avoid a draft. The upper entrance should be a full ¾-inch hole which is protected from mice when used on the bottom story.

You might pack your bees with the idea that you will keep them warm. In reality you will be keeping them cool on warm days when they should fly. On the majority of days it is a benefit for bees to be cool. They are less active when cool, and drop their temperature to 57 degrees unless kept too humid or confined too long. **Only a few days** are so cold that bees must be active to **raise** the temperature to the ideal point. Where adequate protection in the form of windbreaks and a snug, honey-bound hive are provided, bees will not suffer for those few days, though they increase their activity. The packing does real harm when bees should have a quick warm-up by the sun penetrating the hive. While it might be an advantage to pack those surfaces not exposed to the sun, the areas exposed should be dark so they will draw the sun's rays.

Where the climate is not severe, a bottom entrance will create an ascending current of air which will bring the outside temperature change to the bees sooner, as a pocket of warm air will soon form in the upper part of the hive where the bees are.

Should you contemplate using artificial heat for helping your bees winter, you should have your thermostat set so that heat would be supplied only when the hive temperature far from the cluster drops to 57 degrees. Artificial heat will be beneficial only during severe cold, poor protection conditions, and weak colonies. For the last it would be more beneficial than cellar wintering, because of the dryness and flight afforded by outside wintering.

I have noticed repeatedly that my colonies wintered well if there was a large gap at each side of the hive between the two stories. Clustering conditions were very poor below, so that all honey was moved up where the bees preferred to cluster. Motto: Plenty of air below and a sealed cover for bottom-entrance colonies. Middle entrance colonies do well if there is an auger hole in each hive, at the same end of the hive, as well as a small bottom entrance and top entrance at the same end. Top-entrance colonies require considerable air, especially on warm days, unless there is a little draft from below.

Eastern Honey Outlook for 1955

Will Smaller Crops Bring Back One-Story Wintering?

ROGER A. MORSE, Ithaca, N. Y.

THE CONCERN of beekeepers in the East this year is not over the marketing of honey but rather the production of honey. This year's crop was well below average except in isolated areas in New York and Vermont.

Many honey buyers are concerned over the lack of honey and especially their inability to supply bakeries with honey. During the last few years bakery use of honey has increased greatly and some of this market may be lost. This will come about not only because of the shortage of honey but also because wholesalers will probably be unable to offer uniform lots of honey.

Reports of feeding tons of sugar are numerous and in some cases feeding continued late into November. This is true especially of Western New York, the Hudson Valley, and extended far east into New Hampshire. Early fall snows and cold weather made feeding difficult and some beekeepers preferred taking up colonies to feeding. Winter losses from starvation will be high.

The situation is further complicated by the fact that brood rearing was sharply curtailed in late August in much of the East. This means that many of the bees now in the winter clusters are old bees. Many will not survive the winter and small, weak colonies will be the result in the spring.

Small Crops May Cause Change in Management

Smaller crops and uncertain fall honey flows may bring about extensive changes in management. It is the feeling of some that double brood chamber wintering may be a thing of the past except where colonies are to be used for fruit pollination. Smaller colonies going into the winter period may be an answer. The small colony requires less honey or sugar (if feeding is necessary) and with proper management can be brought to full strength for honey flows in June. One has only to point to Dr. C. C. Miller who at the turn of the century wintered small colonies and was able to produce large crops. Honey plants may be yielding less now than then and every effort is necessary in order that the maximum amount of honey be harvested.

One encouraging point is that fruit growers and seed producers realize now more than ever the importance of the honeybee. Reports of receiving $7.00 and $8.00 for pollination services are not uncommon and beekeepers renting colonies of bees for pollination at $4.00 to $6.00 may become a thing of the past.

My Bees Don't Read!

A Beginner's Experience

DAVID A. KING, Clearfield, Utah

AFTER THE long years of waiting for the time to come when I could get a start in beekeeping, at last the day came when the buzzing package of bees arrived by parcel post.

I had spent some 20 years or so studying bees and beekeeping; but this was the first real opportunity I had had to actually make a start in beekeeping.

Naturally, the bees were slow in coming. Not acquainted with the custom of booking orders ahead, I trustingly placed an order some ten days ahead of the time I figured to be ready for the bees, thinking to get service comparable to that on any other mail-order.

Delay after delay came until the package had been nearly a month in arriving—then here it was. Of course the day the bees came I was very busy. I had my irrigation water to care for and was literally "worn to a frazzle" by the time the R.F.D. mail carrier brought the brand new package of bees—some thousands of them—each buzzing her protest at everything.

XUM

I had never hived a package, and the books I had gave only very scant directions on this important subject. However, it seemed easy enough. Heading for the place where I had a nice brand-new hive with ten full sheets of wired foundation all ready and waiting, I carefully removed the direction sheet from the package. This sheet suggested that the queen cage be removed by shaking the bees to the bottom of the package so her majesty could be given special separate treatment. In removing the feed-can to get at the queen cage, I inadvertently released some dozens of bees. They didn't sting, but I'd take a small bet that could I have understood their language my opinion of myself would have dropped some several octaves!

These bees buzzing around more or less confused the issue. I tried to re-insert the sugar can, but more thousands of bees were on their way out and seemingly would not be denied. Accordingly, I turned the cage upside down over the frames in the hive and draped an old quilt over the whole mess.

Still Stuck with the Queen

BUT I STILL had her majesty's private boudoir on my hands. By this time the hive was full of buzzing bees each full of threats as to what she would do if she could lay her stinger on me! The wire over the queen cage had worked loose about this time and her majesty took a notion that she was more than weary of the cramped quarters she had been subjected to for the past several days, so she crawled out.

No, she did not fly though that was not my fault! Taking her gently in my fingers, I guided her in through the entrance to the hive. Instantly she was the center of a buzzing mass of bees.

I was amazed. The little knotheads had ridden all the way from California in the company of this splendid young queen, yet their reaction was just as if fine queens were a dime a dozen and this particular colony had a dozen or so to spare!

I broke up the ball of bees with my fingers and again guided the queen in through the hive entrance. I then rushed to the house and put on a veil and some gloves. Going back out, I did not have to hunt very long for the ball of bees was again busily trying to tear their future hive mother into bits!

Replacing the Queen in the Cage

I trustingly placed the cage down between the frames after replacing the queen inside and removed the cork protecting the candy so the bees could release her by eating out the soft candy closing one end of the cage.

The weather turned against me. Some bitter cold spring nights intervened for a week or so. Then for a couple of days it rained. Finally it wound up the whole show by snowing all of one night and part of the next day. My bees acted as if they were practically dead. The feed I had placed at the hive entrance in a Boardman feeder went down only an inch or so in the quart jar during all of this time.

The day I was finally able to open the hive and look the situation over, I searched for the queen in vain. Not only was she missing entirely, but I found the partially built half-hearted queen cells over what must have been drone brood, the scattered irregular brood pattern (sometimes two or three eggs to a cell) such as my books assured me was characteristic of laying workers.

In two short weeks—and a good cold two weeks at that—the fine colony of bees I had hoped to have had degenerated to a queenless mess of laying workers and that after being provided with as good a queen as money could buy!

I ordered another queen by air mail; but I didn't have too much hopes of any success with her so at the same time I ordered a five-pound package of bees complete with queen.

My luck still held—just as bad as ever. When that nice big five-pound package arrived it consisted of about three or four pounds of dead bees, a good queen, and a pound or so of good workers. I hived these according to the best practices and was successful (as far as I know) in establishing a small colony.

In a day or so I united this colony with the mess of laying workers in the other hive. When the replacement package arrived from the bee-breeder, I carefully united this package with those already in the hive.

According to the books, I should have a pretty good colony of bees now.

Imbedding Wires by Electricity

Always a Beginner's Problem

CHARLES J. KOOVER, Altadena, California

Embedding wires by electricity.—Photo from E. K. Van Harten, Indiana

A WORD OF warning to those who imbed their wires into foundation with electricity may be timely. If you are using the type of imbedder which presses the heated wire down into the wax, it is suggested that you install an on-and-off switch in the electric cord. The switch should be connected between the wall outlet and the imbedding device.

Examination of the imbedded wire will show a black spot where the contact was broken with the imbedding device and the wire, when it was lifted to stop the electric current from heating the wire any longer. The protective coating of tin on the wire has melted.

It seems a better practice to leave the imbedding device resting on the imbedded wire while the current is being cut off at the switch.

As you will have observed, lifting the device off the foundation to break the current has a tendency to pull the wire out of the wax again. Letting it rest on the foundation a moment after cutting off the electric current gives the wax time to harden around the wire.

To those who heat their wires by touching the ends where they are fastened to the frames, it is suggested that you make electric contact only with the nail heads holding the wires taut because the moment contact is made or broken, a spark will occur which melts the tin. If the spark is hot enough, it will even melt the wire too. Once the protective coating of tin is impaired, rust will enter and destroy the wire.

Any inexpensive switch will do. One that is mounted on a small board seems easier to operate, although the push-button switches that come in heating pad cords, toaster cords, and similar devices will also prove satisfactory.

Tips for Beginners

GEORGE F. KNOWLTON, Extension Entomologist

and

WILLIAM P. NYE, U.S.D.A., Agr. Res. Adm., Bureau of Ent. and Plant Quarantine

BEES AND the keeping of bees fascinate many people. However, it is a very specialized field, and for this reason the beginner should start with only a few colonies. He should build up slowly, or, better still, work at beekeeping a season or two with a successful beekeeper. Thus he will learn to perform and understand all phases of commercial beekeeping work. Anyone interested in beekeeping should take at least one good beekeeping magazine and read it regularly.

A few suggestions for the new beekeeper are:

Get acquainted with your county bee inspector. His advice on bee problems and bee diseases should be helpful.

When you start beekeeping, buy good hives of bees recently inspected for freedom from disease. Purchase

B & Z LIBRARY

XUM

Bees are essential to the setting of fruit on peaches, cherries, apples, and pears. In fact, they are essential to successful tree fruit and honey production generally, Dr. G. F. Knowlton, U.S.A.C. entomologist pointed out. They are also essential, of course, in alfalfa seed production, etc.

bees only from a reliable beekeeper. Learn to recognize American foulbrood disease and keep your bees free of it. Should this disease ever appear, your county bee inspector should be called in. He will advise you on proper disposal of infected colonies. In Utah, all bees must be inspected for disease at least once each year.

Locate your hives of bees near available sources of nectar, pollen and water. All three of these are necessary.

Work into commercial beekeeping gradually. Experience and an interest in beekeeping are essential if costly mistakes and losses are to be avoided.

As a rule, you should begin beekeeping in the spring, when fruit trees are coming into blossom.

Have the following equipment in addition to modern hives: Bee veil, smoker, bee gloves, and a hive tool. As you expand you will need to secure 28 gauge wire, a spur imbedder, and wax foundation for frames and an adequate number of supers to use when the honey flow is on. Most beekeepers house their bees in standard 10-frame, two-story, factory-made hives.

Italian or Caucasian bees usually are best for the beginner. Both races are hardy, industrious, and fairly gentle to handle.

Bees must always have an abundant store of honey. Starvation occurs if they go into winter or into long periods of cold spring weather without adequate stores. If enough frames of natural honey have not been saved for spring feeding, heavy sugar syrup may be fed in "feeder cans" to each colony. This will tide them over until natural sources are adequate.

If you like bees, why not start out with a few colonies and minimum equipment and see how fascinating it is? Many persons enjoy beekeeping as a hobby.

Utah State Agricultural College Extension Service, Carl Frischknect, Director Cooperative Extension Work in Agriculture and Home Economics, Utah State Agricultural College and the U. S. Department of Agriculture, Cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

"Buzz About" Honey

MARTHA E. BOOTH, Grand Rapids, Michigan

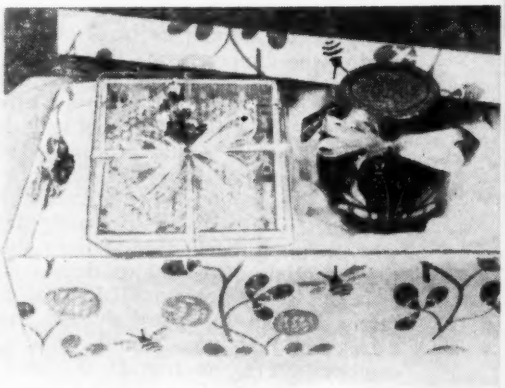
HELLO, BUSY BEES: this is Grand Rapids, Michigan, broadcasting from station B U Z Z !

We are going to tell you about our glamour pack of plastic honeycombs and the rose bowl of strained honey.

As you will see from the photographs, the comb honey is packed in plastic boxes made especially to fit the combs. We mentioned to our supplier that we could buy them for less at the dime store and his reply was "Yes, but they do not fit"!

Glamour packs of honeycomb and Michigan clover and basswood strained honey.

On removing the pine boxes from the frames, they are carefully cleaned of all wax particles and folded neatly in cellophane. We measure a yard of yellow ribbonzene to tie around the box and another for the bow. In the pictures shown we added a tiny bouquet of artificial pink clover. These we sell for $1.00 each, and we have sold as many as ten to a retail customer at Christmas time. Label on tape is used as it adheres to plastic.



Bread and honey hostess box. —Photos by Berta Blain.

Our bee-loved Elmer Carroll, late editor of the former Michigan Beekeepers' magazine, once wrote an article about our 12-ounce jar and called it "Honey Dresses Up To Go To Town". Her town and country dress consists of wings of amber cellophane five by five inches square, tied securely over the cap with a yard of yellow ribbonzene, and another yard separately to tie the bow.

The label can be clearly seen through the cellophane. The pink bees hand painted on the jars are for special orders. The painted bees have been processed so they will not wash off.

For our hostess gift package (bread and butter gift) my husband's co-beekeeper, Miss Berta Blain, has for "Buzz About" Honey Products Co., a gift box covered with bee paper, filled with cut tissue, and one each of the glamour packages of Michigan honey, placed side by side.

More Work for the Bee Inspector

MILTON H. STRICKER, Annandale, New Jersey

IT IS NOT the purpose of this brief comment to condemn either J. E. Eckert's article or the publishing of such an article in the December issue of Gleanings. I wish to go on record as stating I believe Dr. Eckert's sincerity and look forward to the distant future which might offer foolproof antibiotics that would allow the bee-

(Continued on page 61)

XUM

Unity—a low-cost protection for beekeepers

by JOHN H. BAYNES, Kamloops, B. C.

MUCH DISPARAGING comment has been made about the apiary know-how of the back-yard enthusiast. Frequently and with small evidence of intelligent reasoning, his ability is held up to ridicule by way of comparison to that of the large-scale operator.

Size has absolutely nothing to do with the degree of efficient management, a quality which can only be measured by the result of applied knowledge. Participants fall into one of two groups, the proficient and the inefficient. There are no exceptions.

Of all the principles involved in securing the honey crop, those relating to the brood chamber are the ones most frequently called upon to effect success. It is, therefore, virtually impossible to consistently produce a surplus yield without applying some form of brood management. Considering this fact, it is difficult to understand why so many beekeepers fail to study the essentials of brood rearing.

Is this study necessary? It most certainly is, and for precisely the same reason that you would anticipate tragedy, were a friend to attempt flying without first having studied aviation.

In spite of this basic line of reasoning, thousands of people, lacking even an elementary knowledge of the brood nest, are currently attempting beekeeping. Invariably the result is failure. If it ended there, the loss would be insignificant but all too often, dreaded disease spores take refuge in such a haven. When this happens in an apiary under careless or inexperienced management, infection runs wild. Every colony within flying distance is exposed to contagion and the effect may be ruinous to neighboring beekeepers.

Group Study Plan

Numerous widely scattered association groups have demonstrated beyond question their ability to control, if not prevent, beekeeping tragedies. They have achieved this happy state through an active, well-informed membership. Association divisions such as these were not always so well informed but they were aware of their lack of knowledge and overcame this problem through group study. Unity they have found, is a low-cost protection.

It is well to remember that while nothing can be lost from learning, everything may be lost because of a lack of it. Clear thought and careful decisions are the necessary prelude to controlled actions and as this article is directed toward that end, beekeepers everywhere are invited, even urged, to take stock of their apiary knowledge.

THE VERY best way to find out just how well posted you are on the subject is to join the study group of your apiary association. If you have been a delinquent member or have never belonged to the association, there will likely be some surprises in store for you. You will probably find that association meetings have been streamlined or that the members are about to adopt this modern trend.

The "New Look" for associations does away with much of the old time formality. Gatherings are held regularly on a fixed day of each and every month and lectures have largely been replaced by study groups, who debate the local value of up-to-the-minute beekeeping practices.

The subject for debate will probably be the current feature article from such beekeeping publication as the group may choose to support. The reason for this procedure is two-fold. In the first place, these feature articles, having been selected for publication by a competent and authoritative editorial staff, offer subjects which are timely, informative, and reliable. Secondly, members are able to make advance study of the articles through personal subscription to the publication and so prepare themselves for more intelligent discussion when debate opens.

As beekeepers are renowned for their somewhat fixed ideas and rather strong opinions, it is not uncommon for debate to become both fast and furious. Little harm will come of this, provided members observe the rules.

Personal grievances, personalities, and unsupported statements, must all be left at home.

Apiary inspectors, working in conjunction with active association groups, are now conducting some very fine beekeepers' short courses. These and university extension courses are the outcome of investigation into the underlying causes of apiary failure.

Reasoning that an ounce of prevention is worth a pound of cure, investigators have recommended a much broader educational program, placing emphasis on the value of the apiary inspector, firstly, as an instructor and, secondly, as a law-enforcement officer. This does not imply, however, that his duties and responsibilities of inspection are in any way lessened but rather that his position and experience enable him to guide beekeepers toward the adoption of sound and intelligent practices.

Here in the province of British Columbia, beekeepers' short courses are well advertised and are open to the general public. This practice frequently enables our inspectors to contact and instruct prospective beekeepers before they commence operations. In this way, the new beekeeper armed with a sound fundamental training, has a better-than-even chance of avoiding the many pitfalls of apiculture and the hazard to neighboring beekeepers is appreciably reduced.

The short course here is a generous one and while it is basically designed for the beginner, such important topics as brood management and malignant apiary disease are explained in great detail. The result is interesting and informative, both to the experienced beekeeper and the novice alike.

I am not going to tell you that we in British Columbia have succeeded in effecting complete disease control, but it may be said without reservation, that the incidence of contagion here has been very greatly reduced. While the arbitrary b u r n i n g laws are rigidly enforced, our apiary branch advocates the use of sulfathiazole as an AFB deterrent and the practice of it's spring and fall feeding here, has become widespread in the past several years. We do not attempt treatment of diseased colonies and while we are keeping an open mind in this regard, it is unlikely that we shall abolish our burning laws for a while at least.

By studying efficient management, apiary blunders can be minimized and operating costs reduced accordingly. With honey, struggling for consumer acceptance on a market already flooded with low-price highly-advertised food stuffs, few of us can afford to pass up an opportunity which may affect the economy of our business.

From the national viewpoint, apiary education represents an investment in the future well-being of agriculture, and political representatives would do well to consider this fact, with a view to increasing government appropriations for such purpose.

More on the Struggle of the Bees

E. E. LEPPIK, Augustana College, Sioux Falls, S. D.

MY ARTICLE, "The Struggle of Bees", that appeared in the November 1954 issue of this magazine brought many letters from readers, and they all asked for more information on nerve poisons. So I would like to add a few more facts at this time.

Strange to say, the nerve poison which causes now so much trouble to the beekeepers, had been discovered during the last war in Germany as one of the most potent war poisons. In this country the horrors of this new weapon, called G-gas (or German-gas), have been recently disclosed by the Army Chemical Corps (see **Colliers Magazine,** November 27, 1953). Since it is easy to manufacture, some aggressive states have evidently accumulated already large quantities of this terrible poison, and our civilian population has to count now with this serious reality.

Soon after the war new insecticides of an unusual effect have been developed on the basis of nerve poisons. These are diethyl or dimethyl esters of the nitrophenyl thiophosphate.

In the United States they are sold as Parathion, Thiophos, Metacide, or an ingredient of other insecticides. They are most effective contact poisons which are distributed in a bee hive from one bee to another. Their unusual effect on the sensory behavior of bees causes fierce turmoils and struggles in bee hives, with great losses.

Just News

The next meeting of the **Middlesex County Beekeepers' Association (Mass.)** is to be held on Saturday, January 29, at the Waltham Field Station. Plans are now being made for the big Spring Flower Show sponsored by the Boston Horticultural Society in March, at which the Association has a display. In past years the Beekeepers' Exhibit has been one of the most interesting exhibits in the Show and the public looks forward to it eagerly. A gala Christmas party was held at our meeting in December, and the members were visited by Santa Claus himself who distributed a small gift to each person present. Community carol singing was enjoyed by the members.—L. C. Proctor, Secretary.

The **New Jersey Beekeepers' Association** will hold a meeting and a honey contest on January 27th. Two talks will be given by Dr. E. J. Dyce of Cornell University. There will also be a round table discussion on swarm control.

The **Southern Tier Beekeepers' Association** will hold its next meeting at C. L. Reynolds, 25-27 Sturges St., Binghamton, N. Y., on January 18. Come all, a good time, a picture "Bees for Hire" will be shown. Something new! Door prize. You may win. Also a drawing for bee supplies. Bring sandwiches and cookies or doughnuts. Bee seeing you.—H. B. Webb, Sec.

As of Jan. 1, 1955, the **Western Missouri Beekeepers' Association** will be known as the **Midwestern Beekeepers' Association.** We have members from adjoining states, so felt it only fair to remove state lines. On Jan. 9, 1955, at 2:30 we will meet at the home of Mr. and Mrs. Bryan Smith, 2404 East 52 Terrace, Kansas City, North, Mo. Any one interested in bees is welcome.—Herschel M. Allen.

The **Pennsylvania State meeting** will be held in Room E, Farm Show Building in Harrisburg, on Tuesday and Wednesday, January 11 and 12, during the State Farm Show.—E. Anderson.

Women's Auxiliary of the American Beekeeping Federation meets at Sherman Hotel, Chicago Jan. 26, 1955 at 6:30 P.M.

Hostess .....Mrs. Wm. Wallanches
Invocation .....Mrs. Sherman Cook
Welcome Address .....Mrs. Carl Killion
Response .....Mrs. Carl Soder
"Honey, the Oldest and Best Sweet"
—Mrs. Harriett M. Grace, American Honey Institute.
Report — Auxiliary Meetings and Past Presidents— .....Mrs. Newman Lyle
Treasurer's Report—Mrs. Robert Walstrom
Group Singing
Door Prizes

We hope all attending can give some report on the use of honey or on honey exhibits.

Cookies and coffee will be served after the program. Cookies furnished by the Ladies of the Cook-DuPage Beekeepers' Association. Plans are being made for a tour of interesting sights in Chicago, also to attend a Television Program.

See you in Chicago, Jan. 26, 1955. —Mrs. Henry Schaefer, Aux., Pres.

Michigan Winter Bee Meeting to be held Feb. 9, and 10, in Rooms 103-104 Kellogg Center, Michigan State College, East Lansing.

This is the annual Farmers' Week meeting. All beekeepers are welcome. The program will bring you up to date on activities within the industry and give you an opportunity to learn more about beekeeping.

Charles A. Reese, Extension Apiarist for Ohio will give talks on the "Honey Queen and Package Bee Industry in the Southern States" and "The Acceptance of Beekeeping as an Important Factor of Basic Agriculture in the Southwest."—E. C. Martin, Program Chairman.

New Jersey Beekeepers' Association Meeting, January 27, at Y.W.C.A. Hanover Street, Trenton, N. J.

Otto Eberle, President, West Caldwell N. J. presiding

9:30 Get Acquainted Period
Registration for those entering Honey Exhibition
10:00 Report of the President, Otto Eberle
Report of Sec.-Treas., M. H. Stricker
Report of officers and standing committees
10:45 Illustrated talk "Beekeeping in Peru"

E. J. Dyce, Pro. of Apiculture, Cornell University
1:30 Election of officers
"Short Cuts in Apiary Management for the Hobbyist", Dr. E. J. Dyce
Demonstration of swarm control with acual bee equipment. Audience participation
Report of Experiment Station work, Dr. Robert S. Filmer, Research Entomologist, Experiment Station, New Brunswick, N. J.
Report of bee inspection work by Paul L. Holcombe, Supervisor of Bee Culture, Department of Agriculture
Awarding of prizes for honey contest

At the **Ohio State Beekeepers' Association** business meeting held in Columbus on December 6, the following officers were elected for 1955: H. R. Swisher, of Springfield, President; Elmer Smith, Vice-president; and Harry Vandenberg of La Grange, Secretary-Treasurer. Activities of the past year were reviewed by the President and plans outlined for the coming year. The spring meeting will be held the latter part of March in B & Z Building, Ohio State University.

The annual meeting of the **Georgia State Beekeepers' Association** was held on Nov. 29 and 30 in the Daniel Ashley Hotel, Valdosta, Georgia. The meeting was very well attended, about 200 people being present. The meeting was well planned, much credit for which was due Vice-president A. V. Dowling of Valdosta. President Wallace Jernigan of Homerville very ably presided, introducing interesting and important speakers such as Harold Clay, U. S. Dept. of Agriculture, Washington, D. C.; A. D. Hiett, Pres. of the Southern States Beekeepers' Association, U. S. Congresswoman Iris Blitch, and Jack Girardeau, Apiculturist at Coastal Plain Experiment Station, who also was retiring Sec.-Treas. of the Association. Officers of the Georgia Association for 1955 are: President, C. C. Champion, Argyle; Vice-president, LeRoy Landrum, Waycross; Sec.-Treas. C. H. Herndon, Dupont. The Georgia Association voted to send a representative to the Federation meeting in Chicago in January, paying his expenses.

The **Walker County Beekeepers' Association** monthly meeting will be held January 8, 1955 at the Wallaceville Community Center at 1:00 o'clock. There will be several movie films with new film "Let's Go to the Convention" which was made on a trip to the convention in Orlando, Florida. Mr. and Mrs. F. M. Blakemore, Mr. and Mrs. George Kitner and George Kitner, Jr., represented Walker County Beekeepers' Association at the 17th Southern States Convention in Orlando, Florida. It was the 26th Convention and largest attendance in history. The 1955 Convention will be held in Asheville, North Carolina.—A. F.M. Blakemore, Pres.

The **Westchester County Beekeepers' Association** will hold its next regular monthly meeting at 2:30 P.M. on Sunday, Jan. 16, at the Odd Fellows Hall, 20 Lockwood Ave., New Rochelle, N. Y. The meeting will be a short one and at which time the election of officers for the coming year will be announced. We will then retire across the street to the Coronet Tea Room and have our 13th annual banquet. —Carlton E. Slater, Publicity.

Annual Meeting
American Bee Breeders' Association
Forrest Hotel — Hattiesburg, Miss.
January 8, 1955

9:00 Registration
9:30 Call to order by the President
9:35 Invocation — To be announced
9:40 Welcome Address—To be announced
9:50 Response — William W. Wicht, Hattiesburg, Miss.
10:00 President's Address — James Newton, Baton Rouge, La.
10:30 Report of Sec.-Treas. — N. C. Jensen, Macon, Miss.
11:00 Trucking Package Bees from South to North — M. S. Fortune, Mayhew, Miss.
1:30 Package Bees and Queen Prices as they Affect the Future — E. C. Bessonet, Donaldsonville, La.
2:00 Why Hybridization Must Supply the Bees of the Future—G. H. Cale, Jr., Hamilton, Illinois.
2:45 The Functions of the Honey Industry Council of America — N. C. Jenson, Macon, Miss.
3:15 Findings of Multiple Matings of Queens — Dr. Taber, University of Louisiana.
3:45 Round Table Discussion — Paul Cutts, Chairman, Chipley, Fla.

The **Alabama State Beekeepers'** Meeting will be held in Montgomery, Alabama, January 14, 1955. Various subjects will be discussed by H. C. Short, Fitzpatrick; F. E. Guyton, Auburn; W. A. Hosea, Birmingham; Austin Ezelle, George Blake, and W. A. Ruffin, all of Auburn.—F. E. Guyton, Sec.-Treas.

XUM

Asked & Answered

More Than One Egg in a Cell

Question: Some of my queens lay from two to four eggs in one cell. What will happen in such cases?—Delaware.

Answer: In a weak colony which has a vigorous queen, more than one egg will often be found in a cell. Since the bees are not able to expand their brood nest as fast as the queen lays, she apparently goes over the same combs and lays eggs in cells already having an egg. This condition is frequently found in the spring. Another condition under which more than one egg is laid in a cell is that of laying workers. When colonies become hopelessly queenless some worker bees take upon themselves the duty of egg laying. In such cases many eggs will be found in one cell, but eggs from worker bees result only in drones.

Source of Royal Jelly

Question: Where do the nurse bees obtain royal jelly? —Michigan.

Answer: Royal jelly is a secretion by the nurse bees. In this respect it is comparable to the milk of mammals. It is now generally conceded that the glands which produce the larval food are the pharyngeal glands located in the head of the worker bees.

Bees Leave Hive and Become Chilled

Question: What causes bees to leave their hives in a frenzied manner, take flight and drop to the ground stiffened from the cold? The bees are well packed, and the thermometer was 25 degrees when they came out.—Ohio.

Answer: Bees will fly from their hives when it is too cold for safe flight, only when in distress from age or accumulated feces. Old bees often leave the hive on bright days in winter and quickly become chilled in the manner you describe. Since these old bees would otherwise die in the hive a little later their loss is of but little consequence. When the bees are wintering on poor stores, such as some kinds of late-gathered fall honey or honeydew, they often become so laden with indigestible matter that they are in great distress and fly out in an effort to relieve themselves of accumulated feces. It sometimes happens that many bees are lost when there is snow on the ground, even when the air is warm enough for safe flight, by falling into the snow and becoming chilled before they can again take wing.

Corn Fodder for Winter Protection

Question: Is it a good plan to set shocks of corn fodder around each hive to protect the bees in winter?—Ohio.

Answer: It will be better to set the fodder along the fence, around the apiary, for a windbreak, and pack the hives in the usual way, than to place the fodder around the hives. Fodder is entirely too loose for winter packing since currents of air can penetrate through, to some extent. To set shocks of fodder over the hive would deprive the bees of the benefit of the sun shining on the hive, and at the same time not afford much protection so far as retaining the heat of the hive is concerned. Fodder can be used to form a windbreak around the apiary, but it can not well be used as a substitute for winter packing.

Death Rate in the Colony

Question: How many bees are supposed to die per day in each colony during winter?—Montana.

Answer: This depends not only upon the number of bees in the colony, but also on their age at the beginning of winter. If a colony is strong in numbers but a large proportion of the bees are old when winter begins, the death rate will, of course, be high. But if the bees are mostly young at the beginning of winter, the death rate should be low. When colonies are composed chiefly of young bees, only a few of them should die during the early part of the winter. Sometimes only a few dozen bees are lost to the colony during the entire winter, but ordinarily there are many more than this. When bees are wintered in the cellar there may be only a few dead bees on the floor at the end of the first month of confinement; but this number increases each month so that as many bees may die during the month of March as during all the preceding months that the bees were in the cellar.

Winter Passages Through Combs

Question: Is there anything gained by making holes through the combs to permit the bees to pass from one comb to another during winter? Some of the bees in my colonies perish on outside combs during the first cold spell in the fall.—Minnesota.

Answer: In the early days of the modern hive, winter passages through the combs were thought by many to be necessary for best results in wintering.

Langstroth, in his book, "The Hive and the Honeybee", advised that a hole an inch in diameter be cut in the middle of each comb about one-third of the distance from the top, this being done so late in the season that the bees would not fill these holes with comb. Later this practice was abandoned almost entirely and a device known as the Hill's device was placed above the frames to hold the quilt, then so commonly used, an inch or more above the top-bars, the theory being that the bees would cluster in this space and thus have a free passage from comb to comb. However, bees get along very well without either arrangement, especially if the colonies are strong and well protected, and both of these methods have been abandoned. When bees are wintered in two stories the cluster can expand or contract laterally through the space between the upper and lower sets of combs.

Snow Closing the Entrance

Question: Will it injure the bees for the snow to drift high enough to cover the hive entrances, or will enough air pass through the snow to supply the needs of the bees?—Ohio.

Answer: Loose snow does not injure the bees even when it covers the hives completely. In fact, during cold weather the snow affords additional protection. The bees do not need much oxygen during winter if they are quiet and wintering well. Plenty of air would pass through the snow to supply all of the oxygen needed for strong colonies that are quiet. If wet, slushy snow is driven into the entrance by the wind and then freezes, closing the entrance entirely, there would be some danger of the bees smothering, especially if the colony is abnormally active and not wintering well. It is here that the upper entrance, a 5/8-inch hole in the hand hold of the hive, or just above it, is not only a safeguard but a means for the escape of moisture often so fatal to the bees.

Temperature in a Cellar

Question: In a bee-cellar, where should the thermometer be placed—at the bottom, top or middle, to mark the required temperature of 45 degrees?—Michigan.

Answer: We usually hang the thermometer in the middle of the cellar about halfway between the lowest and highest hive of bees. In a good bee-cellar you are not likely to find as much difference in temperature between the floor and the ceiling as in a room where there is artificial heat, and where there is outside exposure.

Weight of Queen and Her Eggs

Question: How much does a queen bee weigh? How many eggs does she lay in 24 hours and how many of her eggs would it require to weigh one grain?—California.

Answer: The weight of the queen bee varies according to whether she is laying heavily or not. During the winter when she is not laying at all she would, of course, weigh the least. Ordinarily, she weighs about .25 of a gram or about three and one-half grains. A good queen is capable of laying 1800 eggs in 24 hours, but she does this only during a short period in the spring. The eggs when first laid weigh about .00013 of a gram but weigh less when about ready to hatch. It would therefore require about 500 of these to weigh one grain, or 240,000 to weigh one ounce.

What is Propolis?

Question: What is propolis?—Texas.

Answer: Propolis is a resinous red to brown substance that is sticky in warm weather, and brittle in cold weather. The bees use it for closing up gaps or openings, especially those that would let in cold air. When it accumulates to such an extent as to interfere with the handling of the frames it should be cleaned away. The bees gather propolis from gums found on the trees and from buds. It has no commercial value.

The place mat to be used at the banquet at the Annual Convention of the American Beekeeping Federation in Chicago, January 25 to 29.

Southern Meeting Successful and Inspiring

ONE OF THE most enjoyable bee meetings of the year was that of the Southern States Beekeepers' Association held in the Orange Court Hotel, Orlando, Florida, with the Florida Beekeepers' Association acting as host organization. The attendance of over 300 represented a majority of the states with the southern states very well represented.

The 1954 officers of the Association, President, A. D. Hiett of Martinsburg, W. Va., L. M. Dewey, Vice-president, of Merritt Island, Florida, H. S. Foster, Secretary and Chief Apiary Inspector of Gainesville, Florida with David Dunavan, Columbia, S. C., and L. M. Lewis as Committee Chairmen, are to be congratulated for the well planned and highly instructive convention. Credit is also due the Florida State Beekeepers' Association which acted as host.

Harold Clay, one of the beekeepers' best friends in Washington, D. C., gave an interesting version of the part the Department of Agriculture plays in beekeeping, with emphasis on the Government loan program. Mr. Clay took back to Washington for consideration the Association's suggestion that chunk comb honey be added to the present liquid honey support program.

Dr. Ouida D. Abbott delivered an interesting lecture telling of the findings of research work with royal jelly at the University of Florida. Royal Jelly is one of the most highly discussed and widely speculative fields of the bee industry today.

Henry Schaefer, President of the American Beekeeping Federation, addressed the group, telling them of the progress made in recent years by the Federation. Mr. Schaefer urged the members to support the work of the Federation because a united group of beekeepers from the entire United States can create a greater interest in our product. We can also obtain better cooperation from the Department of Agriculture in Washington by uniting our efforts. Members of the southern group were urged to attend the Federation meeting in Chicago in January, by Newman Lyle of Iowa, program chairman. The association voted to be represented at the Federation meeting.

Mrs. Harriett M. Grace, Director of the American Honey Institute, gave a very enlightening talk on the valuable contribution of that organization to all honey producers and packers. Mrs. Grace appeared on a local TV program telling the audience of her work and of the meeting.

The Association in turn rewarded the American Honey Institute by auctioning off the fine large display of southern honeys—and some northern honeys, too—the proceeds going to the Institute. Many queen breeders present contributed queens which were auctioned off, the proceeds also going to the Institute. The final total is expected to exceed $1000.

Over 200 of those in attendance participated in the banquet over which M. G. Dadant presided as toastmaster. Recognition was given to veteran southern beekeepers. A Florida honey queen was selected for three final entrants. Entertainment consisted of local musical talent and a magician act, courtesy of Jos. Bumby Hardware of Orlando.

In an effort to stabilize chunk comb honey prices the convention resolved by unanimous vote that the following prices prevail for chunk comb honey:

	Retail	to Grocer
1 lb. jar	$ .45	$8.00 case of 24
2½ lb. jar	1.00	9.00 case of 12
5 lb. jar	1.90	8.75 case of 6

President A. D. Hiett was re-elected for 1955, Dr. E. K. Patton of Ben Hill, Georgia, Vice-president, and W. A. Stephen of Raleigh, N. C. as Sec.-Treas. Next year's meeting will be held in Asheville, N. C.

Lack of space prohibits our mentioning many other important persons in beekeeping who appeared on the program. In summary, no one could have departed from this meeting without being inspired and proud to be a member of the beekeeping profession.

Make a New Year's Resolution to attend the National Bee Meeting January 25-28 in Chicago, Illinois

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 2.

Light clover honey. 60's, $10.20; 10, $9.90 each. Harris Bee Supply, Jackson, Tenn.

HONEY FOR SALE. Write for prices. Lloyd E. Allen, Tipton, Mich.

CLOVER HONEY, white extracted, 18c per pound in 60-pound cans. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

500 60-lb. cans amber honey. Sample on request. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

PURE COUNTRY SORGHUM, recleaned, 20c per lb. in 60-lb. cans. Also blended at 15c upon inquiry. LOSE BROTHERS, INC., 206 E. Jefferson St., Louisville, Ky.

500 cans extra light clover honey. Box 155, Gleanings in Bee Culture, Medina, O.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED — All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. A. I. Root Company of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. W. R. Moomaw, Stone Creek, O.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

WANTED—Light amber-clover and fall-flowers honey. Cloverdale Honey Co., Fredonia, N. Y.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

BEESWAX WANTED. Highest prices paid in cash or trade for bee supplies. The A. I. Root Co., Medina, Ohio, Council Bluffs, Iowa, San Antonio, Texas.

HONEY WANTED—Extra white, white, and light amber in 60's. Send sample and quote price. Cash paid. Clearbrook Honey Farms, Clearbrook, Minnesota.

FINE QUALITY chunk comb honey in one pound jars. Hiltner's Apiaries, North Creek, Ohio.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

FOR SALE

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick Apiaries. Waban, Massachusetts.

WRITE FOR CATALOG — Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries. Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K.D., 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

QUEEN REARING and package bee equipment, Box 388, Picayune, Miss.

NOW AVAILABLE, Fumigil for control of Nosema disease in bees. Write for prices and circular by Abbott's Laboratories. PRAIRIE VIEW HONEY CO., 12303 12th Street, Detroit 6, Michigan.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

Apiculture Supplies

Sensible Prices
Since 1886

Write for 1955 Catalog

WILLIAMS BROS. MFG. CO.
5205 S. E. 82nd Avenue
Portland 66, Oregon

QUEENS ITALIANS

	1-24	24-99	100-up
2-lb. pkg. w/q	$3.00	$2.90	$2.85
3-lb. pkg. w/q	4.00	3.90	3.85
Nice large queens	.95	.90	.85

Send us your order of 1 or 1000
MITCHELL'S APIARIES
Bunkie, La.

1955 QUEEN BEES
3-Banded Italians
1-9 ..... $1.10 each
10 or more ..... 1.00 each
Queens ready about April 5th.
Geo. W. Moore
Shasta, Shasta Co., California

PACKAGE BEES & QUEENS
"Italians"
Write for Prices
Quality does not cost — it pays
THE WILBANKS APIARIES
Claxton, Georgia

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

FOR SALE—754 deep supers, 210 shallow supers, 48 comb supers with fixtures, 93 metal tops, 163 bottoms, $500.00. Large number extra equipment thrown in, inventory on request. Stevens Apiaries, 778 East College Street, Oberlin, Ohio.

600 hives bees to lease on share crop. Good average yield. Write Box 255, Gleanings in Bee Culture, Medina, Ohio.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

CAUCASIANS. 2-lb. pkg.. $3.00; 3-lb. pkg., $4.00. Untested queens, $1.00 each; 100, $75.00. Lewis & Tillery Bee Co., Greenville, Ala.

STANDARD 8 or 10-frame two-story strong colonies for May or June delivery. Reasonable terms. Eugene Walker, Rt. 2, Box 207, Live Oak, Calif.

ITALIANS—Packages, Queens. Martz, Rt. 2, Box 846, Vacaville, California.

PACKAGE BEES—Take a vacation on your express money. Come for your bees. Be our guest while here. We have 1800 hives. Booking orders now. Write Miller Bros., Safford, Alabama.

GOOD QUEENS and Package Bees for 1955. Shippers for more than 34 years. Three-banded Italians only. Tops in production and gentleness. Write for prices stating the number of packages or queens you will need and the dates delivery will be desired. H. C. Short, Fitzpatrick, Ala.

THREE-BANDED Italian bees and queens. Our regular stock and the Dadant Starline Hybrids. Extra good bees. Due to the late springs in North Carolina we are breeding queens down here until May 1st. We will have queens laying any time after Feb. 10th, so we can give prompt service. 1 to 25, $1.20; 25 up, $1.10. For Dadant s Starline, add 25c per queen. Alamance Bee Company, La Belle, Fla. Box 485.

FOR SALE about 500 hives of bees, extracting equipment etc. Also comb honey. Mrs. Merl Harrington, Benton, Rt. 2, Pa.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription $1.00. Hotel Cactus, San Angelo, Tex.

HELP WANTED

EXPERIENCED QUEEN BREEDER and package producer to manage successful going business in South. Answer in own handwriting stating wages expected, care of Breeder, this magazine. All replies confidential.

WANTED—Beekeeper 1955 season State experience, give references. Hartman, 4851 Paddock Road, Cincinnati, Ohio.

HELP WANTED for large bee business. Excellent wages paid for good experienced help. Also one helper wanted. M. E. Ballard, Roxbury, N. Y.

WANTED—Two experienced bee men. Year around or seasonal. Jims' Valley Apiaries, Sunnyside, Washington.

Help Wanted for 1955: Give experience, age, height, and references. Do not apply if you drink. Howard Weaver, Navasota, Texas.

WANTED—Two beemen for the package season 1955. Good wages and good working and living conditions. Write for full information, giving your experience, references, age and height. H. C. Short, Fitzpatrick, Ala.

HELP WANTED for 1955 season. Good opportunity. Write. Walter Weldon, Moorhead, Iowa.

POSITION WANTED

Position wanted in U. S. by an experienced beekeeper, 35 years old, married with one son. Understands farm work and has had experience as garage mechanic. I wish to hear from a beekeeper who will help me to get established. Frans L. Vlaming, Bijenstand "Soestdijk", Anna Paulownalaan 9, Soestdijk, Holland.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

Bargains in new or used honey cans or Root Supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

PINKING SHEARS — ONLY $1.95 postpaid. Chromium plated, precision made. Manufacturer's Christmas Overstock. Guaranteed $7.95 value or money refunded. Order by mail. Lincoln Surplus Sales, 1704 W. Farwell Ave., Chicago 26, Illinois.

WANTED: One hundred colonies of bees or four-pound packages by April. Bee Pollination Service, Mays Landing, N. J.

MAGAZINES

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P. India, or available through them. Subs. Rs9/ or 15 shillings or $2.25 yearly. Sample copy post free for Rs1/8/, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

ARCHIVE of BEE SCIENCE (Archive fur Bienenkunde), oldest scientific, independent bee journal in the world. Select feature material gives lasting theoretical and practical knowledge. Sample copies available. Two large 1953 editions for the low price of DM 5.50. Biene-Verlag (Bee Publishers), Lindau (B), Postcheck Karlsruhe 5581, Germany.

BEE WORLD, the international journal of the Bee Research Association, published monthly, contains the latest research reports on bees and beekeeping. With **Apicultural Abstracts** it costs $3.00 per annum. Apicultural Abstracts only $1.75 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

Happy New Year!

And we do mean just that. With all the problems of 1954 behind us, let's look forward into 1955 with determination to improve our operations in every way possible.

Rossman Apiaries
are ready to serve you with
Package Bees and Queens
to help you achieve this end.

Watch this space next issue for prices on Island Hybrid and Rossman stock queens and Package Bees or write us.

"They Produce"

Rossman Apiaries

P. O. Box 133 Moultrie, Ga.

GIRARDEAU APIARIES
Tifton, Georgia
Shippers of
ITALIAN
Package Bees and Queens

BETTER BRED QUEENS
Three-Banded Italians
Season's Greetings! Let us book your order early. One or a truckload. Write for prices.
CALVERT APIARIES Calvert, Alabama

Answers to Picture Quiz on page 31:

No. 1.-F. B. Paddock, Chief Apiary Inspector of Iowa. Responsible for the publication of the famous annual "Report of the State Apiarist of Iowa".

No. 2.-George H. Rea, one of the first Extension Apiarists in the United States. Worked in N. Y., Pa., and Tenn. First appointee on a permanent basis with title of Special Agent in Bee Culture (1916). Now retired.

No. 3.-James I. Hambleton, Head of the Division of Bee Culture and Biological Control of the U. S. Dept. of Agriculture at Beltsville, Md.

No. 4.-C. B. Gooderham, former Canadian Dominion Apiarist. Author of many beekeeping bulletins. Now retired.

JENSEN'S PACKAGE BEES AND QUEENS FOR 1955

Oh yes,—there's something new in queens as well as cars this year—in **Dadant's New Improved "Starline" Hybrids**, that is. Scientific breeding research and years of testing have brought astounding results.

Impartial tests over the past four years prove **Starline Hybrids** have 18% greater egg laying ability (acceleration in car parlance).

Reg. U.S. Pat. Off.

Larger, more compact brood pattern resulting in larger forces of worker bee, "Honey Getters."

Less inclined to swarm even if apartments (hives) become somewhat crowded at times due to neglect or stupidity of management.

Ability to withstand severe cold of winter, their greater vigor results in "quicker starting" and fast spring build-up.

Up to 38% greater honey production (pay-load for the beekeeper) than common stock, in three-year trial run.

Evenly tempered (gentle) to keep your blood-pressure normal.

All of the above may be yours in the New crosses for 1955. Prices same as last year. . . . Special introductory offer: we will substitute 10 Starline Hybrid Queens at the price of regulars, or 10% of order whichever is least. Write for circular and price list.

JENSEN'S APIARIES MACON, MISSISSIPPI U.S.A.

ITALIAN QUEENS
and
PACKAGE BEES
W. E. PLANT
Hattiesburg, Mississippi

If you are taking time to read, why not read the best? Condensed to save you time. Illustrated to give you pleasure.

Modern Beekeeping
The Picture Bee Magazine
Box 210 Clarkson, Kentucky

FLOWERS' QUALITY ITALIANS:
That stands test for honey gatherers. The short honey crop last year, makes us all want to make all the honey possible; and package and queen buyers need to place orders early to be sure of shipping date. We ship truck, parcel post, and express. We start shipping April 1st. Queens bred from hives making 300 pounds honey, guaranteed mated and laying. Write **FLOWERS BEE CO. Jesup, Ga. U.S.A.**

HONEY WANTED
Bryant & Sawyer
2425 Hunter St., Los Angeles 21

High Quality Italian
QUEENS & PACKAGE BEES
FOR 1955
Carlus T. Harper
New Brockton, Ala.

WE HAVE THEM--
Bee Supplies of SUPERIOR Quality
At the Lowest Possible Prices

Our new 1955 catalog will be ready soon. A card or letter will reserve a copy for you.

Contact us at any of the following SIX points of distribution:

4242 Elizabeth Street, Denver 16, Colorado
5201 District Boulevard, Los Angeles, California
Idaho Falls, Idaho P. O. Box 278
Madera, California R 4, Box 405
349 Third Street, Ogden, Utah
1880 East Buchanan Street, Phoenix, Arizona

Remember — THE BEST IS ALWAYS **"SUPERIOR"**

Superior Honey Company
Manufacturers of Beekeepers Supplies

BUSINESS OF BEEKEEPING

(Continued from page 13)

he will get helpful advice free. Simply supply the beekeeper with new hives in which to place the swarms.

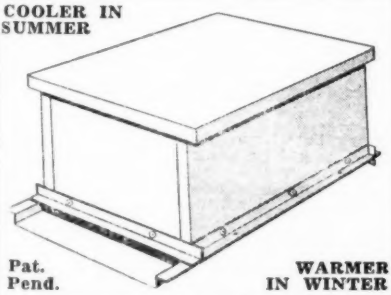
A good swarm will cost about two dollars, and if they need to be requeened, a good Italian queen can be bought for a dollar. If the summer and fall are favorable for honey production, a strong early swarm may store sufficient surplus the first year to pay for the hive, the swarm, and the new queen. Certainly if swarms can be secured locally it is better than to buy package bees from the South in making a start.

If swarms are not available, package bees may be purchased. Packages containing two or three pounds of bees and laying queens have given very satisfactory results in the Experiment Station apiary. They cost from three to five dollars and require feeding until the nectar flow opens. They should be secured at about the time apple trees bloom, or from the middle to the last of April in Central Missouri. Instructions come with them telling just how to open the package and how to put the bees and queen in the hive.

Capturing Swarms

The average farm boy will have in mind a much cheaper plan of getting a few swarms of bees. In timbered regions a hive with drawn combs, securely fastened in the fork of a tree during the swarming season, will quite likely become occupied by a colony of bees. The End

COOLER IN SUMMER



Pat. Pend.

WARMER IN WINTER

UNI-TEMP ALUMINUM HIVE

Dealer Inquiries Invited.

The A. H. HALE CO.

Hapeville, Georgia, U.S.A.

CAUCASIAN Bees and Queens

for 1955

Prices on Request

Howard Weaver

Navasota, Texas

1955 Price Offerings

Package Bees and Queens

2-lb. Pkg. w/q	$2.50
3-lb. Pkg. w/q	3.30
Queen	.70

One dollar per package books order.

HONEY BOWL APIARIES

Box 574

F. R. Sawyer, Owner

Bunkie Louisiana

Good Italian Queens

In season

White Pine Bee Farms

Rockton, Pa.

MORE WORK FOR THE BEE INSPECTOR

(Continued from page 49)

keeper complete control of disease.

As for the scientific side, so we have mendicants that can cure (?) bee diseases, if used properly. But, look at the practical side. There are many beekeepers who can't use the recommendations properly.

Many will try a little control; many will bog down; many shouldn't have tried. Of course, their neighbors with well cared for apiaries, filled with strong colonies, will probably suffer because robber bees make no distinction between contaminated and sterile honey.

Well, why go into a tirade. I'm just thankful I'm not a bee inspector. In the end, these poor boys will have to clean up the mess.

YORK'S PACKAGE BEES and QUEENS for 1 9 5 5

The Preference of Leading Honey Producers

QUALITY: Your Choice of two Outstanding Strains, Dadant Starlines or our own Italians, both Strains are **Quality Bred.**

SERVICE: 10,000 colonies to load trucks with speed and still maintain express and parcel post schedules. Also, 10,000 nuclei to insure ample supply of vigorous young laying queens for shipment when they are needed.

PROGRESS: Fumagillin-fed grafting yards, mating yards, and package syrup to maintain your package morale until brood emerges. A bonus in every package.

DADANT'S STARLINE HYBRIDS

Reg. U. S. Pat. Off.

PRICES with Italian Queens:	1-24	25-99	100 up
2-lb.	$3.75	$3.50	$3.25
3-lb.	4.75	4.50	4.25
4-lb.	5.75	5.50	5.25
5-lb.	6.75	6.50	6.25
Queens	1.25	1.15	1.05

Above prices are for/or with our regular line Italians. For DADANT STARLINE 4-WAY HYBRIDS, add 25c each additional. For TESTED QUEENS, add $1.00 each additional. For QUEENLESS PACKAGES, deduct $1.00 per package.

Shipments are made by express, parcel post, or your truck. Our facilities for truck loading are among the best. In most cases your load is on the way the same day it is prepared avoiding holding over of numbers of packages several days until the entire load is prepared. Parcel post and express shipments handled promptly and with experience. We recommend shipment by parcel post of all shipments less than five packages. For further information, write us.

YORK BEE COMPANY Jesup, Georgia, U.S.A.
(The Universal Apiaries)

ITALIAN PACKAGE BEES "GULF BREEZE" QUEENS

It is time to place your order for GULF BREEZE stock, so please RUSH yours to us NOW. One package to a truckload.

Quantity	PRICES: Queens	2-lb. pkg. w/q	3-lb. pkg. w/q
1-24	$1.25	$3.50	$4.40
25-99	1.15	3.35	4.25
100-up	1.10	3.25	4.15

BESSONET BEE COMPANY Donaldsonville, La.

QUALITY-BRED
Italian Queens
Ready March 10, 1955
$1.00 each or $10.80 per doz.
All queens shipped Air mail. Write for price on package bees delivered by truckload.
Walter D. Leverette
Apiaries
P. O. Box 364 Ft. Pierce, Fla.

CAUCASIAN & CARNIOLANS

Start the New Year with young queens and be assured of plenty of bees when the honey flow starts. Caucasians or Carniolans build up rapidly, build white combs, and are gentlest of all races of bees.
Untested queens ..... $1.20 ea.
Foreign ..... 1.50 ea.
Discount on quantity.
Order early to be sure of queens when needed.
W. D. REAMS
Box 87 LaBelle, Florida

Hotel Sherman is the place and Jan. 25-28 is the date for the Annual Convention of the American Beekeeping Federation.

PROTECT YOUR FUTURE. BUY YOUR SAVINGS BONDS NOW.

BEES

Italians – Caucasians

By Parcel Post

By Express

By Truck

No matter how small or how large your order—let us supply your needs.
We are especially well equipped to handle whole or part truck loads.
Send for circular and price list.

THE STOVER APIARIES
Mayhew, Miss.

CAUCASIAN or ITALIAN
Package Bees and Queens

Bees gentle to work with, less swarming, good producers, health certificate, live arrival guaranteed are just a few things you get when your requirements are sent to me. Write for prices.

FARRIS HOMAN
Shannon, Miss.

3-Banded Italian
BEES and QUEENS

Shipped Anywhere in United States and Canada

Write for Price List

H. C. BRUNSON
P.O. Box 188 Phone 2161
Hampton, South Carolina

JOHN DAVIS QUEENS
We ship until November 1 and fall is the right time to requeen. Order now and be sure. $1.00 each, any number.

LITTLE'S APIARIES
Shelbyville, Box 122, Tenn.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES
Weslaco, Texas

U. S. Savings Bonds come in all sizes . . . . .
and grow bigger every year.

IMPORTANT — To All Beekeepers — IMPORTANT

The Dadant Starline Hybrid Stock released for use during 1955 has made, by years of trial, the following **Very Considerable** records:—

38% Better Honey Production than the average common stock of the country. (3 years of trial)

18% Better Egg Laying Ability than the average common stock of the country. (4 years of trial)

DADANT'S STARLINE HYBRIDS

Reg. U.S. Pat. Off.

The results of 6 other trials in which this stock excells and Special Introductory offer to those not yet having used Starline Hybrids will be supplied by return mail without obligation.

GARON'S Own THREE-BANDED ITALIAN Stock is being systematically improved through our Know How in selecting Breeding Queens and Drone Mothers for combinability and other necessary factors for Highest Honey Production.

Garon's Queens available during last-half of March, Dadant's Starline from April first.

GARON BEE COMPANY - - - - - - - - Donaldsonville, La.

J. E. WING & SONS
41 Years Continuous Service
Italian Package Bees and Queens
Our Specialty
Knights Landing, Calif.

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

ITALIAN
Package Bees and Queens
Jackson Apiaries
Box 58 Funston, Ga.

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations and plant possibilities.
1 year, $2.00, U. S. and Canada
Foreign postage, 50c a year extra

AMERICAN BEE JOURNAL
Hamilton, Illinois

Index to Display Advertisers

Aeppler Co., C. W. 58
American Bee Journal 64
Bessonet Bee Co. 62
Blue Bonnet Apiaries 63
Brunson, H. C. 63
Burleson & Son, T. W. 7
Calvert Apiaries 59
Canadian Bee Journal 2
Chrysler & Son, W. A. 2
Colorado Honey Administrative Co. 6
Dadant & Sons ..... Inside front cover
Flowers Bee Co. 60
Garon Bee Co. 64
Girardeau Apiaries 59
Hale Co., The A. H. 61
Harper, Carlus T. 60
Hazel-Atlas Glass Co. ..... Inside back cover
Homan, Farris 63
Honey Bowl Apiaries 61
Honey Sales Co. 6
Hubbard Apiaries 7
Hutchison Mfg. Co. 7
Jackson Apiaries 64
Jensen's Apiaries 60
Jepson Co., H. H. 7
Kelley Co., The Walter T. 6
Leahy Mfg. Co. 2
Leverette Apiaries, Walter T. 62
Little's Apiaries 63
Lotz Co., August 4
Marshfield Mfg. Co. 3
McCord Mfg. Co. 7
Miller's Honey Co. 3
Mitchell's Apiaries 58
Modern Beekeeping 60
Moore, Geo. W. 58
Muth Co., The Fred W. 3
Plant, W. E. 60
Prairie View Honey Co. 3
Reams, W. D. 62
Root Co., The A. I. ..... Back cover, 8
Root Co. of Syracuse, A. I. 2
Rossman Apiaries 59
Schmidt Apiaries 6
Sioux Honey Association 4
Stoller Honey Farms 7
Stover Apiaries 63
Superior Honey Co. 60
Taylor, Stewart 4
Tennessee Bee & Honey Co. 2
Walker, Eugene 64
Wax Workers 6
Weaver, Howard 61
White Pine Bee Farms 61
Wilbanks Apiaries 58
Williams Bros. Mfg. Co. 58
Wing & Sons, J. E. 64
Woodman Co., A. G. 7
Yates, A. W. 3
York Bee Co. 62

XUM

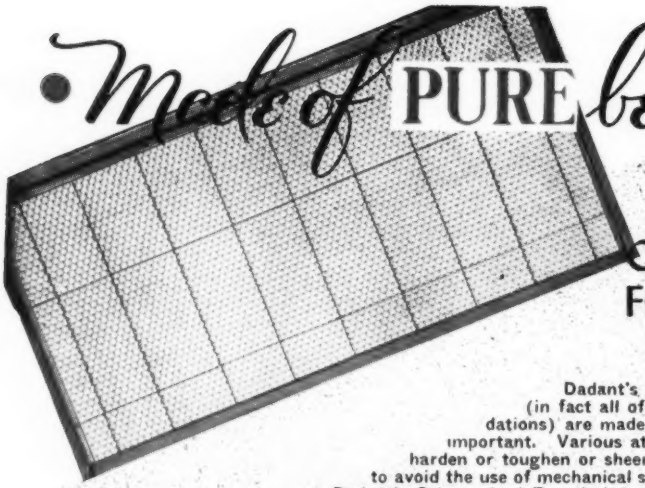
B & Z LIBRARY

Gleanings in BEE CULTURE

Feb 1955

XUM

• Made of PURE beeswax



DADANT'S CRIMP-WIRED FOUNDATION

Dadant's Crimp-wired Foundation (in fact all of Dadant's Bee Comb Foundations) are made of pure beeswax. This is important. Various attempts have been made to harden or toughen or sheer up pure beeswax in order to avoid the use of mechanical supports such as are used in Dadant's Crimp-wired Foundation. However, remember beeswax is a basic raw material which goes into many products and has many uses.

Industry demands purity and refuses known mixtures. Remember, too, that the beeswax in comb honey whether in section or in bulk is actually a food because it is a part of the honey. Therefore, any mixing of other waxes with it is absolutely an adulteration.

Keep your beeswax safe for food use—worth the highest price on any market.

The Choice Of Expert Beekeepers

- In heat or cold the hooks will hold
- The crimped wires radiate shoulders of strength
- Wires of special steel for greatest support
- Accurate embedding to bees use every inch
- Made only from pure beeswax
- Refined for utmost cleanliness
- Brilliant, natural color
- Accepted at once by the bees
- Cell walls a guide to perfect comb
- Milled to exact measures
- All cells just alike
- Every sheet the same
- Carefully and rigidly inspected
- Securely and safely wrapped

Gives You LIFETIME COMBS

FIG. 1—Pure Beeswax: fleecy flakes, thin bars. FIG. 2—½% carnauba wax: large, clear, bright burrs. FIG. 3—1% carnauba wax: smaller, bright burrs, tiny stars. FIG. 4—2% carnauba wax: large number burrs and stars. FIG. 5—5% carnauba wax: countless tiny brilliant crystals.

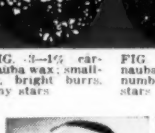
COMPARATIVE MICROPHOTOS of Pure Beeswax and four stages of wax adulteration.

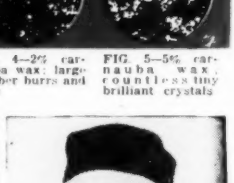
USED 32 YEARS -- STILL THE BEST

Since 1921 we have used over 10 tons of Dadant's Crimp-wired Foundation. Of the thousands of combs drawn from this foundation some have had to be replaced on account of damage and disease but no replacement has been necessary because of foundation failure.

I regard Dadant's Crimp-wired Foundation as the best for brood and extracting combs when cost and service are considered. We have found that combs built upon Dadant's Crimp-wired Foundation, in well-wired frames, stand up in high speed extractors and in the fast moving trucks of the migratory beekeeper.

Chas. S. Engle, Beeville, Texas.





1863 1953

Grandfather Charles Dadant, typically French, Founder of the firm of Dadant and Sons

Dadant & Sons, Inc.

Hamilton, Illinois — Paris, Texas

G. B. Lewis Co. Branches—Colonie & Montgomery Sts., Albany 1, N. Y.; 1117 Jefferson St., Lynchburg, Va.; 92 Riverside St., Chillicothe, Ohio

Dealers Everywhere

SINCE 1878 DADANT'S FOUNDATIONS HAVE BEEN THE CHOICE OF EXPERT BEEKEEPERS